BULLETIN

No. 50

RAILWAY AND LOCOMOTIVE HISTORICAL SOCIETY

BULLETIN No. 50

ISSUED BY
THE RAILWAY AND LOCOMOTIVE HISTORICAL SOCIETY, INC.
BAKER LIBRARY, HARVARD BUSINESS SCHOOL
BOSTON, MASSACHUSETTS

OCTOBER, 1939

Price for Members $1.00 *Price for Non-Members $2.00*

Table of Contents

Officers and Directors of the Railway and Locomotive Historical Society, Inc.

CHAS. E. FISHER, *President*
51 Newbury St., Newton Centre, Mass.

SIDNEY WITHINGTON, *Vice President*
7 Briar Lane, New Haven, Ct.

WARREN JACOBS, *Secretary*
South Station, Boston, Mass.

HAROLD S. WALKER, *Assistant Secretary*
10 Winthrop Ave., Marblehead, Mass.

GEO. P. BECKER, *Treasurer*
96 Avon Hill St., Cambridge, Mass.

JOHN W. MERRILL, *Curator*
148 State St., Boston, Mass.

W. R. FOGG, *Director*
26 Monadnock St., Boston, Mass.

EDWARD HUNGERFORD, *Director*
230 Park Ave., New York, N. Y.

DR. ARTHUR H. COLE, *Director*
Librarian, Baker Library, Harvard Business School, Boston, Mass.

G. W. BISHOP, *Resident European Director*
12 Queen's Road, Kenilworth, Warwickshire, England

D. L. JOSLYN, *Resident Western Director*
2164 Castro Way, Sacramento, Calif.

PROF. EDWARD C. SCHMIDT, *Mid-Western Representative*
905 West California Ave., Urbana, Illinois

GILBERT H. KNEISS, *Pacific Coast Representative*
18 Forest Lane, Berkeley, Cal.

ROBERT R. BROWN, *Eastern Canadian Representative*
700 St. Catherine St., West, Montreal, P. Q., Canada

NORMAN THOMPSON, *Western Canadian Representative*
Box No. 2004, Winnipeg, Manitoba, Canada

D. S. BARRIE, *British Representative*
62 Longland Drive, Totteridge, N. 20, London, England

CARLTON PARKER, *Exchange Manager*
45 Warren St., Newton Center, Mass.

CHAPTER OFFICERS

of The Railway and Locomotive Historical Society, Inc.

NEW YORK CHAPTER

FRANKLIN W. KROUT, *Chairman*
C/o Mutual Benefit Life Insurance Co.,
Newark, N. J.
ROGERS E. M. WHITAKER, *Vice Chairman*
121 West 11th St., New York, N. Y.
PAUL R. BRUSTMAN, *Secretary*
P. O. Box #434, Grand Central Annex, New York, N. Y.
ROBERT C. SCHMID, *Treasurer*
266 Maitland Ave., West Englewood, N. J.

CHICAGO CHAPTER

D. W. YUNGMEYER, *Chairman*
5116 Dorchester Ave., Chicago, Ill.
F. H. ROPINSKE, *Vice Chairman*
1342 North Hamlin Ave., Chicago, Ill.
A. L. LINDQUIST, *Secretary*
952 North Mayfield Ave., Chicago, Ill.
JOHN LEAMY, *Treasurer*
C/o C. P. Ry., Board of Trade Bldg., Chicago, Ill.

PACIFIC COAST CHAPTER

GILBERT H. KNEISS, *Chairman*
18 Forest Lane, Berkeley, Cal.
G. M. BEST, *Vice Chairman*
511 North Sierra Dr., Beverly Hills, Cal.
CAPT. FREDERIC SHAW, *Vice Chairman*,
542—18th Ave., San Francisco, Cal.
S. F. MERRITT, *Secretary-Treasurer*
836 Alma Ave., Oakland, Cal.

TWIN CITIES CHAPTER

ALDEN E. MILLER, *Chairman*
3448 33rd Ave., South, Minneapolis, Minn.
W. H. ERSKINE, *Vice-Chairman*
2371 Chilcombe St., St. Paul, Minn.
P. S. VAN WYCK, *Secretary-Treasurer*
417 Oliver Ave., South, Minneapolis, Minn.

Among the many advancements in the science of modern railroading such as standard couplings, was the adoption of the standard code. To those of us whose interests extend to the collecting of early timetables, it was not unusual for the railroad to place the operating rules on the reverse side of the sheet. These rules applied to that railroad alone and might be utterly different from those used by its connecting lines. The devising and the adoption of the standard code was a long, slow process but it forms a part of our railroad history. We are happy to present a very valuable paper on this subject, the work of Mr. Jacobs, our Secretary.

Mr. Graham has furnished a very interesting paper on the Lackawanna locomotives and Mr. Kessler has given us a bit of history of the Unadilla Valley. The Editor wishes to express his appreciation of the papers covering the exhibits at both Fairs and lastly, to Captain Robinson for his assistance in handling the Central New England Ry. in such capable fashion.

It is with considerable regret that we advise our members that the circular letter issued by a large publishing company in New York and

including the description of a book published by another Society was done without the consent and knowledge of the officers of this Society. An explanation was requested and an apology has been offered to the Society and we assume this is the end of the incident. In this connection, your Society has always been willing for any publishing house of a reputable standing to send such circulars to our members as might be of interest to them, provided a request to do so has been accompanied with a copy of the material to be sent. The Membership Roster which is mailed to our membership is for your own personal use—that and no other and it seems best, in view of this recent incident and others that have transpired in the past, that in the future we must reserve this right to the officers of the Society alone and we will appreciate being informed to the contrary.

During the past few years, some of our older collectors have viewed with alarm the apparent thoughtlessness shown by the younger collectors in the matter of copying prints. Our older collectors built up their collections through no little energy and expense and it would seem to any right minded person that he is entitled to his efforts. Consequently, when he does you a favor in the matter of exchange and sends you some of his material and you return the favor, he has the right to assume that his prints are for your collection, not for you to copy and then pass out prints from your negatives as your own. This is the chief reason why so many of the older collectors decline to exchange with the younger and their fears in the matter of copying are well founded. It seems only fair to respect each others wishes in this matter and the least you can do is to ask permission to make a copy and give the owner a chance to express his wishes for no exchange can succeed without mutual trust of both parties. Furthermore, new and interesting material is always coming to light and here is your chance to unearth some of this material and have it for your very own. After all, one needs only to apply the precept of doing unto others as he would like to be done by.

Locomotives of the New Haven Railroad

By Capt. Winfield W. Robinson

We Now Come to the History and Motive Power of the

CENTRAL NEW ENGLAND RAILWAY

THIS system was made up of a number of small independent railroads and for the purpose of this historical article we will take up the individual roads in the order in which they became identified with the property which finally became the Central New England Railway Company. The first of these was the

CONNECTICUT WESTERN RAILROAD COMPANY

Chartered June 25, 1868 and constructed a railroad from the city of Hartford to a point on the westerly boundary of Connecticut in the township of Salisbury, named by the railroad people as State Line. Distance 66.7 miles. Ground was broken October 20, 1869 and the road completed in December 1871. Trackage rights were then secured over the Dutchess & Columbia from State Line to Millerton 1.6 miles.

The following quotation is taken from a local Connecticut history published in 1873:

"After the opening of the Naugatuck Railroad in 1850, the necessity of a rail communication eastward to the Connecticut River and westward to the Hudson became more and more apparent, but until recently seemed impracticable, by reason of the high grades and circuitous lines required in running roads easterly and westerly over the mountain ranges between the Hudson and Connecticut rivers.

The steady growth of Collinsville, New Hartford and Winsted and the great enlargement of the iron interests of Salisbury and Canaan stimulated the desire to overcome difficulties in the way of the enterprise, which had seemed to the communities interested to be insuperable.

Public attention was first called to the practicability of the plan by E. T. Butler, Esq., of Norfolk, in 1865, and mainly through his instrumentality, experimental surveys were made during that year, and in 1866 a charter was granted to the 'Connecticut Western Railroad Company' with power to construct a road from Collinsville to the Massachusetts state line on the border of North Canaan. Strenuous efforts were made by Mr. Butler and others to interest capitalists in the scheme. The Boston, Hartford & Erie Railroad Company was vainly solicited to make the route a part of its line. Hartford and Springfield capitalists were appealed to in vain. The New Haven & Northampton (Canal) Railroad Company would have nothing to do with it. The New York & Harlem, the Housatonic and the Naugatuck companies, with which it was to form connections, gave it a cold shoulder.

At this nearly hopeless stage of the enterprise, the Dutchess & Columbia Railroad Company, under the auspices of George H. Brown, Esq., of Washington Hollow, N. Y., had completed its road from near Fishkill

on the Hudson, opposite Newburgh, to near Pine Plains in Dutchess County, New York, and was seeking an eastern connection. The existence of the Connecticut Western charter was made known to Mr. Brown, who, with characteristic energy, at once embarked with Mr. Butler and others in the enterprise. A new charter was obtained from the Legislature of 1868, granting power to extend the road from the city of Hartford to Collinsville, thence to follow the line of the charter of 1866 through New Hartford, Winsted and Norfolk; and thence to diverge westerly through North Canaan and Salisbury, in the direction of Millerton on the Harlem railroad, so as to connect with the Dutchess & Columbia at the state line. The charter authorized townships along the line of the road, in their corporate capacity, to subscribe and pay for stock in the road to an amount not exceeding five percent of their grand (tax) lists, on being empowered to do so by a two-thirds vote of the inhabitants of such townships at meetings duly called and notified for that purpose.

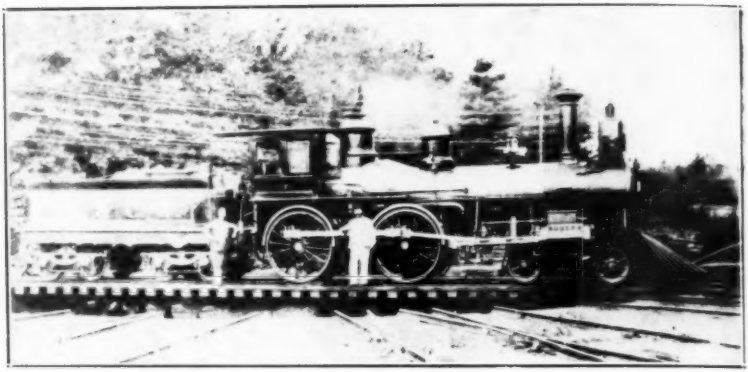
The townships of Winchester, Salisbury, Canaan, Norfolk, Canton, Simsbury, Bloomfield and Hartford voted a total of $1,123,800 for stock subscriptions and individual citizens along the line subscribed for $314,790 of the capital stock. It is said that $50,000 of this latter amount was raised by President Brown of the Dutchess & Columbia.

The surveys, estimates and location of the road were completed in 1870, and the whole line was put under contract immediately afterward. The first passenger train passed over the road from Hartford to Millerton on December 21, 1871, and returned the same day, and since then the communication has been uninterrupted. Its connections with other roads along its line will make it a trunk line of equal importance with the other east and west roads of New England. Its connections with roads already completed are with three railroads in Hartford, with the Canal road at Simsbury, the Canal's branch at Collinsville, the Naugatuck at Winsted, the Housatonic at Canaan, the Poughkeepsie & Eastern and the Dutchess & Columbia at State Line and the Harlem at Millerton. Other connections are shortly to be completed with the Connecticut River and the Boston & Albany railroads at Springfield, the Collinsville & New Britain railroad at Collinsville and the Rhinebeck & Connecticut road from the Hudson river to State Line, now in the process of construction.

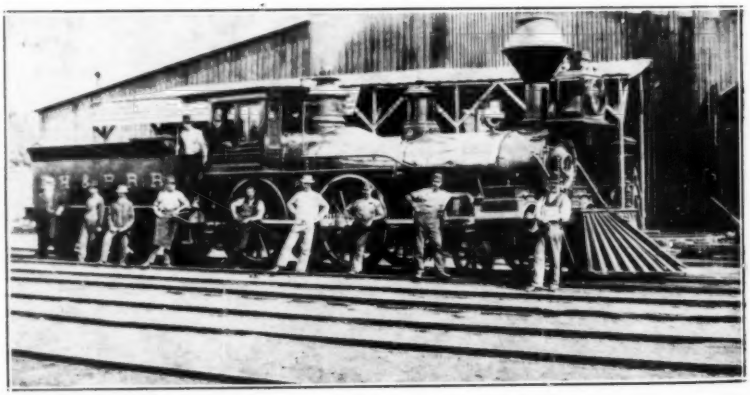
With these new avenues of approach and intercourse with every portion of New England, and especially with direct access to the coal fields of Pennsylvania, and the wheat and lumber regions of the great West, a rapid growth in the population and wealth of the villages on the line of the Connecticut Western is confidently expected."

With Messrs. Butler and Brown, former Governor Holley of the state of Connecticut was an active promoter of the railroad, and Oliver W. Barnes, civil engineer, who supervised the building of the Dutchess & Columbia, was also chief engineer of the Connecticut Western.

April 27, 1880 the property was placed in the hands of the State Treasurer of the State of Connecticut as trustee, by whom it was operated until August 1, 1881.



H. & Ct. W. #3—Rogers, 1871.



Courtesy of John Leonard Driscoll.

P. H. & B. #1—Cooke, 1871.

HARTFORD AND CONNECTICUT WESTERN RAILROAD COMPANY

This company was organized as of August 1, 1881 by the holders of the first mortgage bonds of the Connecticut Western which mortgage had been foreclosed on October 25, 1880. The authority for the reorganization was an act of the Connecticut Legislature which provided for an exchange of bonds of the old company for stock of the new.

The arrangement for the use of the tracks of the Dutchess & Columbia (reorganized as the Newburgh, Dutchess & Connecticut) between State Line and Millerton, was continued, and in 1883 an agreement was entered into, pending purchase, for trackage rights over the Poughkeepsie, Hartford & Boston from State Line to Boston Corners, about seven miles.

May 25, 1882 the Hartford & Connecticut Western purchased the line of the Rhinebeck & Connecticut from Rhinecliff to Boston Corners, 35.2 miles, the company issuing in payment therefor $800,000 of new stock, and on July 1, 1882 the R. & C., was transferred to the H. & C. W. This gave the company a main line from Hartford to Rhinecliff of 109 miles with the trackage rights from State Line to Millerton and from State Line to Boston Corners. This latter section the H. & C. W. purchased from the P. H. & B. September 1, 1884.

When the Philadelphia & Reading people first cast longing eyes on the New England territory they formed, in April 1888, a subsidiary called the Delaware & New England Railroad Company, a "paper" organization. Archibald A. McLeod, President of the Philadelphia & Reading, had secured for his company control of the Central Railroad of New Jersey and the Lehigh Valley, and the plan was to take in also the Boston & Maine and other New England railroads. The bridge across the Hudson at Poughkeepsie having become a certainty, persons acting in behalf of the Philadelphia & Reading company, March 4, 1887, purchased a controlling interest in the Hartford & Connecticut Western, and then efforts were made to acquire the Poughkeepsie, Hartford & Boston to form a connection between the bridge and the H. & C. W., but Mr. Cone, President of the P. H. & B., refused to sell. Rather than submit to his traffic proposition, the Philadelphia & Reading people, working through the D. & N. E. subsidiary, secured a charter (September 14, 1888) for the Poughkeepsie and Connecticut Railroad Company, under which they constructed a line from Poughkeepsie to Pine Plains, 27 miles, paralleling the P. H. & B., and northerly from Pine Plains 3½ miles to a point on the H. & C. W. called Silvernail's Bridge, now the hamlet of Silvernails.

The D. & N. E. also organized the Hudson Connecting Railroad Company (chartered January 28, 1887) and under this authority constructed a line from the western end of Poughkeepsie Bridge to the village of Campbell Hall in Orange County, New York, 26 miles. This gave connections at Campbell Hall with the New York, Ontario & Western, the Walkill Valley and the Pennsylvania, Poughkeepsie & Boston*, and at

* The Pennsylvania, Poughkeepsie & Boston R. R. Co., was formed by the merger of a number of small railroads and some additional construction to extend

Maybrook with the Lehigh & Hudson River which at that time was building northerly toward the last named junction.

The Hudson Connecting road was completed May 22, 1889 and the Poughkeepsie & Connecticut July 29, 1889. Thus a direct line was opened from Hartford to the numerous connections in Orange County.

In January 1889 the company's main office was in Philadelphia. I have before me a printed circular of May 1889 announcing the removal of the offices from Philadelphia to New York City and this bears at the top the names of the Hartford & Connecticut Western, the Poughkeepsie & Connecticut, the Poughkeepsie Bridge Company and the Hudson Connecting railroads. John S. Wilson is shown as president of the four organizations. September 2, 1889 a special order issued from President Wilson's office gave notice to the effect that on and after that date the road would be operated under the title of the Central New England and Western Railroad Company.

RHINEBECK AND CONNECTICUT RAILROAD COMPANY

This company was organized June 29, 1870. Its promoters were the owners of the Rondout & Oswego railroad and it had the same official family as that road, with principal offices at Rondout.

The plan was to construct the railroad from Rhinecliff on the Hudson, opposite Rondout (now the city of Kingston) to the state line of Connecticut, 41.6 miles, and later to build a bridge across the Hudson River from Rondout to Rhinebeck, thereby forming a continuous line from the Great Lakes at Oswego to Boston. These financiers also controlled the proposed Rondout & Port Jervis Railroad Company (incorporated December 23, 1870) which was to be constructed to the Delaware River, this to be a connecting link between the coal regions of Pennsylvania and the manufacturing districts of the east.

The route of the Rhinebeck & Connecticut was surveyed in December 1870. There was a delay in raising money. Some of the townships through which the road was to pass voted financial assistance and some refused to do so. Construction finally got started in October 1871 and the right of way was completed to Boston Corners and officially opened April 4, 1875. No attempt was made on further construction to the Connecticut line, but trackage rights were secured over the P. H. & B. from Boston Corners to State Line, 6.4 miles.

Thomas Cornell of Rondout was president of the Rhinebeck & Connecticut as well as of the Rondout & Oswego and the Rondout & Port Jervis. From the records on file in the Capitol at Albany it appears that the R. & P. J. project was abandoned in 1876. In 1872 Mr. Cornell

---

the line to Pine Island in Orange County, thence with trackage rights over the Erie's branch to Goshen and Campbell Hall. During the period this narrative deals with it was controlled by the Philadelphia & Reading. Since that time it passed into the hands of the Lehigh Valley and the New York, Susquehanna & Western companies and later was reorganized as the Lehigh & New England R. R. Co. It is now owned by the Lehigh Coal & Navigation Company. A partially completed history of this railroad is in the hands of the Society and its story may be told in a future issue of the Bulletin.

had reorganized the Rondout & Oswego as the New York, Kingston & Syracuse, and in 1875 he again reorganized it as the Ulster & Delaware. Apparently he was having troubles aplenty on the west side of the river and it is probable that at about this time he gave up the idea of a bridge across the Hudson and the through route to New England, for in 1882 the property and franchises of the R. & C. were conveyed to the H. & C. W.

Up to 1879 the cost of the road and equipment of the R. & C. had been $1,440,920.

CENTRAL NEW ENGLAND AND WESTERN RAILROAD COMPANY

July 22, 1889 the Delaware & New England people organized the C. N. E. & W. R. R. Co., as a consolidation of the Poughkeepsie & Connecticut and the Hudson Connecting railroads, with a lease of the Hartford & Connecticut Western and the Poughkeepsie Bridge Company, and trackage rights over the N. D. & C., from State Line to Millerton, in all 164 miles. The officers and directors of the newly formed company were practically all officials of the Philadelphia & Reading.

In January 1892 the Philadelphia & Reading Company purchased the Delaware & New England Railroad Company which owned the entire capital stock of the Poughkeepsie Bridge Company and a majority of the capital stock of the Central New England & Western Railroad Company, thereby placing the ownership of the C. N. E. & W. directly into the hands of the P. & R., and on February 1, 1892 the Reading began to operate the system. Shortly thereafter, due to financial difficulties and at the instance of certain of the Bridge and C. N. E. & W. bondholders, a receiver, James K. O. Sherwood of New York City, was appointed, who continued to operate the road until June 27, 1892.

POUGHKEEPSIE BRIDGE COMPANY

The plan for a railroad bridge across the Hudson River at Poughkeepsie was first proposed in 1868 when the building of the Poughkeepsie & Eastern railroad became a certainty. The company was incorporated May 11, 1871 by business men of Poughkeepsie and the promoters of the P. & E. railroad. Work began immediately, but soon stopped.

Early in 1873 the Pennsylvania Railroad, through its president and one of its directors, subscribed for 1,100,000 of the two million capitalization, thus giving the Pennsylvania control, and a new Board of Directors, mostly officials of that railroad, was elected. September 18, 1873 the financial panic hit the country and the administration of the bridge company was doomed. The Pennsylvania Railroad might have held its contract had it not been for the untimely death of its president, J. Edgar Thompson, before arrangements could be made to transfer the individual subscriptions to the company. The increasing financial difficulties at the time caused the Pennsylvania Railroad stockholders to refuse to assume any new obligations.

Efforts to make the Poughkeepsie & Eastern a paying proposition by giving it through traffic was the leading motive for the revival of the bridge enterprise. Reorganization followed the death of President Thompson and the withdrawal of the Pennsylvania Railroad. Then the bridge promoters looked to New England for help and the Boston Chamber of Commerce took the matter up and got a bridge building company interested. Work was resumed November 14, 1876, but did not continue long.

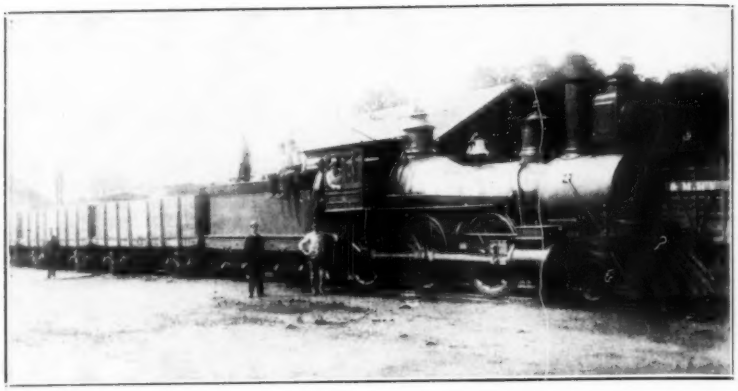
Work was again started, for the third time, October 8, 1886 by the Manhattan Bridge Building Company, organized by W. W. Gibbs of Philadelphia who had associated with him John W. Brock and other capitalists of that city. In 1888 John S. Wilson of Philadelphia, formerly General Traffic Manager of the Pennsylvania Railroad, was engaged as president. The bridge was finally completed in December 1888, the first train passing over it on the 29th of that month.

In February 1892 a receiver was appointed in the interest of the Philadelphia & Reading Railroad Company, and on June 30, 1892 the property rights and franchises of this company were sold by order of the court and were taken over by the Poughkeepsie Bridge and Railroad Company, incorporated July 14, 1892.

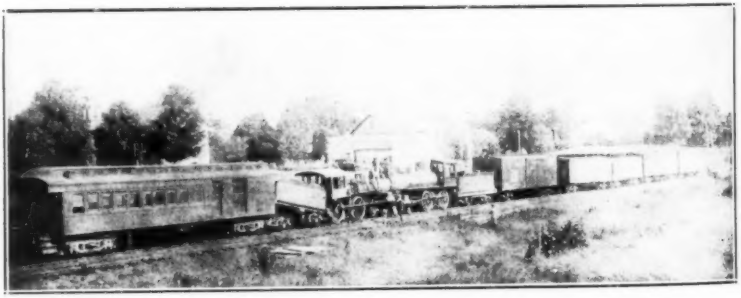
POUGHKEEPSIE BRIDGE RAILROAD COMPANY

Why such a name as this was chosen for the purpose the railroad people had in mind is a mystery. It must not be confused with the Poughkeepsie Bridge Company or its successor the Poughkeepsie Bridge & Railroad Company. The Poughkeepsie Bridge Railroad Company had nothing whatsoever to do with the bridge. It was incorporated June 5, 1888 by the people backing the C. N. E. & W. I shall quote from its charter: "To construct a railroad from a point on the line of the Poughkeepsie Bridge Company in the city of Poughkeepsie, about 700 feet west of Washington Street, running easterly by the most direct route to a point on the lands of P. L. Van Wagenen in the township of Poughkeepsie, beyond the line of the New York & Massachusetts Railway Company, and about two miles from the place of beginning, together with a branch line from the line above described, leaving it at a point in the city of Poughkeepsie and running in a southeasterly direction to a connection with the New York & Massachusetts railway at a point in the said city west of Hamilton Street and near North Street, one-half mile."

The one-half mile stretch was a connection with the P. & E., and is still in use, as the present freight station in Poughkeepsie is the old depot of the P. & E. I have been around those railroad yards many times and the only thing I can think of for the two-mile section is the possibility that the Poughkeepsie & Connecticut was constructed only as far as the city line of the city of Poughkeepsie and the two miles was built under the P. B. R. R. Company's charter to connect up the bridge with the P. & C. There seems to be no one living today who can offer a better guess.



P. H. & B. #4—Cooke. 1873.



A slight misunderstanding between P. & E. Nos. 7 and 1.

DUTCHESS COUNTY RAILROAD COMPANY

Incorporated April 21, 1890 to construct a railroad from Poughkeepsie Junction (a connection with the C. N. E. & W., on the easterly outskirts of the city of Poughkeepsie) to Hopewell Junction, 13 miles, and was opened May 21, 1892. It had the same officers as the C. N. E. & W. At Hopewell Junction it connected with the New York & New England and the Newburgh, Dutchess & Connecticut, giving both roads an outlet over the Poughkeepsie Bridge. It was controlled by the Philadelphia & Reading people and was leased to the C. N. E. & W., the lease passing to the Philadelphia, Reading & New England upon the formation of that company. It is now part of the main line from Campbell Hall to Danbury.

In looking over some old records at Albany I found the incorporation August 31, 1886, of the Poughkeepsie & South Eastern Railroad Company, to construct a line "commencing at or near the Hudson River in the city of Poughkeepsie and running thence through the city and through the townships of Poughkeepsie, LaGrange, Wappingers and East Fishkill to Hopewell Junction, thirteen miles." Three of the persons who signed the application for the charter were Jacob A. Perkins, Robert F. Wilkinson and Homer A. Nelson of Poughkeepsie; all the others were from Brooklyn. The president is shown as E. L. Dwyer and George S. Bowen as general manager. Construction was commenced in October 1889, but just how much work was done or how long it continued I have been unable to learn. Probably this is the right of way which was followed by the Dutchess County railroad.

PHILADELPHIA, READING AND NEW ENGLAND RAILROAD CO.

Following the conclusion of the receivership of the C. N. E. & W. R. R. Co., the owners of the property, the Reading people, incorporated the Philadelphia, Reading and New England Railroad Company, as a consolidation, August 1, 1892, of the Central New England & Western and the Poughkeepsie Bridge and Railroad Company, continuing the lease of the H. & C. W., and the trackage rights from State Line to Millerton. Also, the new company acquired by lease the line of the Dutchess County railroad.

May 1, 1893 the P. R. & N. E. defaulted in the payment of interest on its first mortgage bonds. August 19, 1893 proceedings for the foreclosure of the mortgage were instituted and on the same day the property was placed in the hands of James K. O. Sherwood as receiver. The sale of the property was set for October 6, 1898. Mr. Sherwood continued to operate the railroad until January 23, 1899 when he delivered it to the new purchaser, the Central New England Railway Company.

It is interesting to note here that construction on the long talked of Springfield branch finally got started in 1898 but on account of the financial troubles was not completed until 1902.

CENTRAL NEW ENGLAND RAILWAY COMPANY

Like its two predecessors, this company was controlled by the Philadelphia & Reading. It was chartered January 12, 1899, as successor, by purchase at foreclosure sale, of the Philadelphia, Reading & New England, and took possession of the property upon termination of the receivership of the last named company, continuing the previous arrangements as to leases, trackage rights, etc. Its principal office was at Philadelphia and its officers and directors largely those of the Reading.

The extension of the road from Tariffville, Conn., to Agawam Junction, Mass., 14¼ miles, was completed early in 1902 and trackage rights were secured over the Boston & Albany from the junction to Springfield 3½ miles.

The annual reports, with few exceptions, from 1886 on, were one continuous series of deficits, no dividends, default on interest payments, foreclosures, reorganizations, etc., and it is no wonder that the Philadelphia & Reading finally gave up a losing battle. They operated the new company about five years. Early in 1904 the New York, New Haven & Hartford Railroad Company acquired control of the C. N. E. by purchase of a majority of its capital stock and general mortgage income bonds. Thereupon New Haven officers and directors were substituted for those of the P. & R., but the line continued to be operated separately from the New Haven, the arrangement of leases, trackage rights, etc., remaining as heretofore, including, in addition, that portion of the old New York & New England from Wicopee Junction to Fishkill Landing, not quite two miles.

Under a joint agreement of consolidation filed in the office of the Secretary of State of New York June 25, 1907, the capital stock, franchises and properties of the Newburgh, Dutchess & Connecticut Railroad Company, the Dutchess County Railroad Company, the Poughkeepsie Bridge Railroad Company, and the Poughkeepsie & Eastern Railway Company were merged into the Central New England Railway Company, the New Haven people assuming the funded debts of the merged companies.

NEWBURGH, DUTCHESS AND CONNECTICUT RAILROAD CO.

Very little need be said on this road as its history has been very ably and interestingly told in Bulletin 34 of May 1934 "The Dutchess and Columbia and its Associates" by a distinguished life member of this Society, Inglis Stuart, Esq., of Beacon, N. Y.

Sufficient it is to say here that the company was chartered September 4, 1866 as the Dutchess & Columbia Railroad Company, to construct a railroad from a point called Bain's Station on the New York & Harlem Railroad, in the township of Copake, Columbia County, to a point in the township of Fishkill, Dutchess County, on the Hudson River. It appears that hesitancy upon the part of the townships in Columbia County through which the road was to pass to obligate themselves in assisting in financing construction costs and the influence of

some politicians in the northern section of Dutchess County, the idea of reaching Bain's Station was given up and the line turned sharply to the east from Pine Plains going over the mountains to Millerton and a mile further east to the state line of Connecticut to form a connection at that point with the Connecticut Western which was then building westerly from Hartford. Evidently this construction from Pine Plains to State Line was authorized by Articles filed in the Secretary of State's office October 11, 1867 entitled "Eastern Branch of the Dutchess & Columbia Railroad Company." The road was completed to State Line in 1871.

To reach the iron ore mines at Clove Valley a branch was constructed from the main line at Clove Junction, passing Sylvan Lake, 8¼ miles. This was incorporated as the Clove Branch Railroad Company, chartered November 21, 1868.

When the New York, Boston & Montreal Railway Company was formed in 1873, a "paper" organization proposing to link up several short lines in New York and Vermont, the Dutchess & Columbia became involved in the scheme. The plan collapsed in the financial panic, throwing the D. & C. into receivership, and it was sold under foreclosure of mortgage August 5, 1876. Thereupon, the first mortgage bondholders incorporated, January 15, 1877, the Newburgh, Dutchess & Connecticut Railroad Company to take over the property and franchises of the Dutchess & Columbia, and it continued to operate as such until it was merged into the Central New England system.

Cost of N. D. & C. road and equipment to 1879 was $2,258,342.

The New York & New England had trackage rights over the N. D. & C.. from Hopewell Junction to Wicopee Junction, the Poughkeepsie & Eastern from Stissing Junction to Pine Plains and the Hartford & Connecticut Western from State Line to Millerton.

In looking over some old files of the N. D. & C. a couple of years ago I ran across some very interesting correspondence in 1897 between W. B. Burnet, president of The Investment Corporation of 30 Broad Street, New York City, John Crosby Brown, president of the N. D. & C., G. Hunter Brown, vice-president of the N. D. & C., and Russell Sage, president of the P. & E. The correspondence related to the plan of these gentlemen to incorporate the Hudson River and Berkshire Railroad Company as a consolidation of the Newburgh, Dutchess & Connecticut and the Poughkeepsie & Eastern. Mr. Burnet signed himself as president of the H. R. & B. R. R. Co. The correspondence deals with the troubles they were having in securing a charter from the state of Massachusetts to permit the new company to construct from the state line into Massachusetts to a connection with the Boston & Maine at Springfield. Just how they proposed to construct through Columbia County to reach the state line is not mentioned in the papers, but I assume they intended to do so under the charter of the Hudson River & Boston Railway Company which was held by the P. & E. The papers show that at Boston the bill passed the lower house of the State Legislature without opposition, but that "it cannot be passed in the Senate

unless the B. & M.'s influence is brought to bear'', as the Boston & Albany is opposed to it, and that if the support of President Tuttle could be secured the bill would be assured of passage, but that Mr. Tuttle was seriously ill and unable to take care of any business. Evidently the necessary votes were not secured, as this seems to end the H. R. & B. R. R. Co.

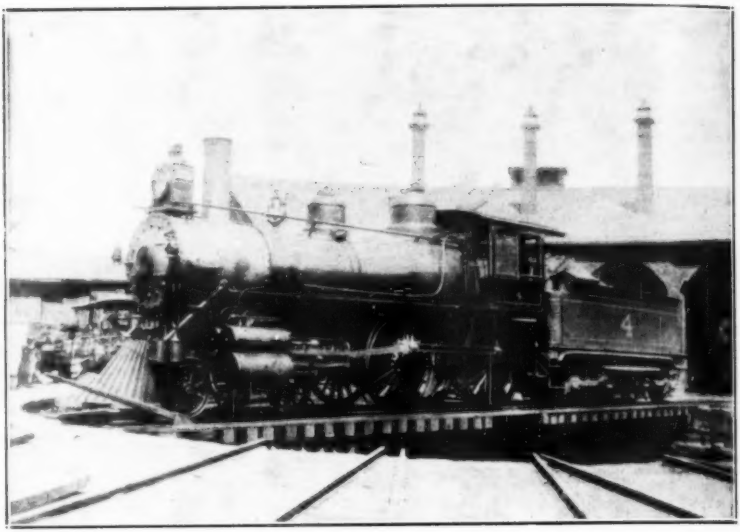
POUGHKEEPSIE AND EASTERN RAILWAY COMPANY

The thought of a railroad from Poughkeepsie easterly seems to have been in the minds of the people of Dutchess County for many years before such a road became a reality. There is much news of these plans in the local histories of that section.

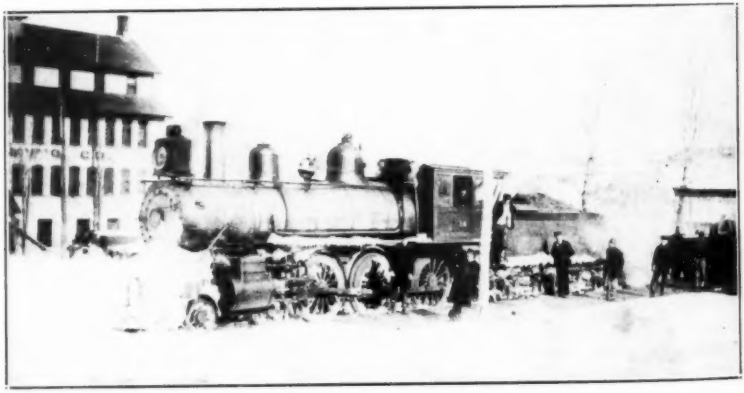
March 26, 1832 the Dutchess Railroad Company was chartered to build a railway from Poughkeepsie to the Connecticut state line. A route was surveyed to Amenia in 1833, through Pine Plains and the township of North East, but beyond this nothing was done because the promoters were unable to raise funds as most of the people favored a canal across the county instead of a railroad. The project was revived May 25, 1836 when the company was re-chartered under the same name to construct from Poughkeepsie to Pine Plains and thence through a part of Columbia County to the Massachusetts state line. Nothing came of this.

In 1855 the idea was again taken up at which time additional lines were surveyed but no further progress made except that a controversy arose as to whether the terminus should be Poughkeepsie or Fishkill. The advocates of Fishkill as a terminus were in the majority and so voted, whereupon the Poughkeepsie people withdrew from the enterprise and it was dropped for ten years. In the spring of 1865 it was again revived and a meeting was held at Washington Hollow. But when hostility to Poughkeepsie arose, the representative of that community withdrew and decided to act independently. Then a meeting was held at Salt Point which adjourned for a more general one at Bangall, at which an organization under the general railroad law was proposed to build from the Hudson River in the city of Poughkeepsie via Pine Plains to Ancram or Copake and thence to the Connecticut state line, with a branch at or near Salt Point, to pass near Washington Hollow, to the New York & Harlem Railroad at Wassaic. This was commonly referred to as the Poughkeepsie & Copake railroad, but was never incorporated under such name. Surveys for this road were completed and at a meeting in Washington Hollow in February 1866 it was announced that the estimated cost of construction and equipment, including the purchase of 4½ miles of railway from the Columbia Iron Mining Company* was $1,002,200, with estimated annual receipts of $219,000.

*Owners of iron mines in the Harlem Valley, with the object of securing an outlet to the Hudson River, in 1865 built a piece of track 4½ miles long from Boston Corners and announced they would extend it to Pine Plains, there to await the decision of the rival schemes then being fought out for a terminus on the Hudson River at either Poughkeepsie or Fishkill.



C. N. E. #4—Baldwin, 1893.



P. R. & N. E. #14—Baldwin, 1891.

April 13, 1866 the Poughkeepsie and Eastern Railroad Company was chartered to extend from the Hudson River in the city of Poughkeepsie, following the line of Fallkill Creek, then across the valley of Wappingers Creek, continuing up it to the north line of the county, thence passing easterly around the north end of the range of hills that enclose the Harlem Valley, to the Connecticut state line at the terminus of the proposed Connecticut Western railroad near Millerton. It was completed to the state line October 1, 1872, 43 miles. A newspaper account of that date states there remained to be built the section between Smith Street in Poughkeepsie to the Hudson River, the grading of which was pretty much done and the laying of the rails about to commence. This section was down the steep hill, which was negotiated by a switchback, to the New York Central tracks, and is still in service. When the entire road was finally completed it was 45 miles long and cost $1,499,920. Between Stissing Junction and Pine Plains the P. & E. did not build a right of way but secured trackage rights over the N. D. & C., at an annual rental of $6,000.

The company's revenue was disappointing and on June 20, 1874, it was placed in the hands of a receiver. April 14, 1875, it was sold under foreclosure of mortgage to George P. Pelton of Poughkeepsie, who reorganized it as the Poughkeepsie, Hartford & Boston Railroad Company, charter dated May 15, 1875, and operation was continued the same as under the P. & E. management.

July 14, 1885 the P. H. & B. people secured a charter for the Hudson River and Boston Railway Company, proposing to build from a junction of the tracks of the P. H. & B. at Ancram Station, Columbia County, northeasterly through the townships of Ancram, Copake and Hillsdale, crossing the New York & Harlem railroad north of Copake Iron Works, and thence to the westerly line of the state of Massachusetts, 14 miles. As far as can be learned, no construction was ever attempted under this charter.

There seems to have been considerable trouble between the Rhinebeck & Connecticut and the P. & E. over the seven mile right of way between Boston Corners and State Line. The P. & E. built and owned this section. When the R. & C. construction reached Boston Corners they tried to make some kind of a deal with the P. & E., which, failing, the R. & C. made plans to parallel the P. & E. between the two stations. Before this was done an agreement was reached whereby both roads would use the same track jointly and this arrangement continued until September 1, 1884 when the P. H. & B. sold the piece to the H. & C. W., purchaser of the R. & C.

Late in 1886 the property of the P. H. & B. was sold under foreclosure and reorganized January 22, 1887 as the New York & Massachusetts Railway Company. Its purchaser was Henry D. Cone, paper manufacturer, of Stockbridge, Mass. It is said that most of the funds for the purchase came from Russell Sage of New York City, one of the leading financiers of Wall Street of that day. This new company was

consolidated April 26, 1887 with the Hudson River & Boston Railway Company under the name of the New York & Massachusetts Railway Company.

Financial difficulties continued as usual and in March 1893 the N. Y. & M. was sold under foreclosure, being purchased by Mr. Sage and his associates, who reorganized it as the Poughkeepsie & Eastern Railway Company, chartered April 13, 1893.

In the Poughkeepsie *News-Press* of May 19, 1898 there appeared an article commenting on the financial condition of the P. & E. since Mr. Sage took over the line, and the statement is made that "for the past three years for every $100 taken in on the road $110 has been spent on it", adding, further, that Mr. Sage has spent on it $250,000 on which he has received no interest. June 17, 1898 the road went into receivership.*

In 1907 the P. & E. was merged into the Central New England system. The C. N. E. then abandoned that portion of its own line from Van Wagner to Pine Plains, constructed years previously under the charter of the Poughkeepsie & Connecticut, and used the right of way of the P. & E. between those two points, placing the line in first-class condition.

Along about July 1915 I made a trip over the C. N. E. while it was operated separately from the New Haven. I boarded the train at Poughkeepsie shortly after noon. It ran over the former P. & E. right of way to Stissing Jct., then over the former N. D. & C. right of way to State Line and the C. W. right of way to Tariffville, where I changed for the branch line to Agawam Jct., and Springfield. The train con-

---

* I remember distinctly a trip I made over the P. & E. when I was about 15 years of age and that is over 35 years ago. I was to spend a summer's week-end with relatives in Pleasant Valley. Arriving at Poughkeepsie on the New York Central on a Saturday afternoon I took a trolley car to the P. & E. depot, probably two or three miles from the N. Y. C. station. The P. & E. train was scheduled to leave around 5 p. m. There was a large assemblage of passengers waiting. We could see the train standing in the yards about an eighth of a mile from the depot, but it did not back in. The passengers became impatient at the long delay. The conductor, a man well along in years, fat, good-natured and jolly, was on the depot platform and joked with the passengers, but avoided telling the reason for the delay. Long after scheduled leaving time the train did back down and we finally got started. About half way to Pleasant Valley the train came almost to a standstill, just crawling along. Looking out the window I saw a locomotive lying on its side in the ditch. One of the passengers told me he had made the trip the week previous and the engine was in the same place in the ditch where I saw it. It was apparent no attempt had been made to put it back on the rails.

Returning the following day, Sunday, I reached the P. & E. depot at Pleasant Valley in sufficient time for the evening train to Poughkeepsie. The agent asked me if I wished to make the New York Central connection for New York City. "Then", said he, "You had better catch the Central New England train, because our train is going to be very late; it hasn't yet left Boston Corners. If you hurry you can make it." He then showed me the way to the C. N. E. depot, about a mile over a country road. I did hurry, running and catching a ride on a farmer's wagon. This was before automobiles. I reached the station just as the C. N. E. train was pulling in and made my connections at Poughkeepsie.

This little incident will give the reader a fair idea of the demoralized conditions existing on the P. & E. for a few years before it was taken into the C. N. E.

sisted of an express car, combination baggage and mail, smoker and a coach, and the equipment, accommodations, etc., were all that could be expected. But at no time do I believe there were more than six or eight passengers on the train. This was in the days before private automobile competition had made inroads into the passenger business of any of the railroads. Probably there never was very much travel between Hartford, Springfield, Poughkeepsie and Campbell Hall, although almost up to the time the New Haven merged the C. N. E. into its own system, the railroad maintained a through passenger train in each direction between Hartford and Campbell Hall daily, as well as five locals out of Hartford, one from Winsted to Millerton, one out of Campbell Hall and two out of Rhinecliff.

The H. & C. W. had a rather elaborate public time table folder, on the outside the name "The Rhinebeck Line" prominently displayed. It, as well as its two successors had three through trains daily in each direction and numerous locals. The N. D. & C. ran two daily trains in each direction between Dutchess Junction and Millerton in the winter and three in the summer. The R. & C. had two daily trains to State Line and return. The P. & E. ran five out of Poughkeepsie and three out of Boston Corners daily, and the Dutchess County had three daily trains in each direction between Hopewell Jct., and Poughkeepsie.

Our readers will remember my reference to the Federal Express in the chapter on the Lehigh & Hudson River in Bulletin 47, which the New Haven operated between Boston and Washington over the Poughkeepsie Bridge Route previous to the building of the Hell Gate bridge. While this was a profitable train, it was practically all through travel with little originating on the line of the C. N. E.

There seems to have been a period in the boom days following the World War when the road really did a land-office business. I am informed that freight traffic was so heavy that the officials were planning to double track the line from Stissing Junction to Pine Plains, over which section the P. & E. and the N. D. & C. divisions both operated. On some days, in addition to the regular scheduled trains, there were as many as forty extras. With the ending of Coolidge prosperity, the loss of the milk business, etc., traffic declined almost to the vanishing point on this part of the road. In recent years it has been entirely of a local character, coal, lumber and other supplies to merchants in the villages, agricultural products, very little if any manufactured goods; enough for a short way freight daily, but not producing sufficient revenue to justify continued operation. Between Hartford and Poughkeepsie there has been practically no freight for a number of years and such express business as developed was handled by the New Haven's fleet of automobile trucks plying between those points. The N. D. & C. has not been operated north of Millbrook for a long while and the rails between Pine Plains and Millerton have been gone for years.

August 1, 1938 a large portion of the mileage was abandoned by permission of the Interstate Commerce Commission. That section from Campbell Hall to Hopewell Junction and Danbury over the Pough-

keepsie Bridge locally now referred to as the "main line", will be continued, as this is a profitable line and the New Haven's link to the roads west of the Hudson River. Over this line for a number of years now the New Haven has routed all the through business in preference to the original main line to Hartford. All that remains of the N. D. & C. is the 11½ miles between Hopewell Junction and Wicopee Junction, this forming a part of the New Haven's branch from Hopewell Junction to Fishkill Landing in the city of Beacon. The P. & E. and the R. & C. are abandoned in their entirety. All that is left of the H. & C. W. is a piece from Lakeville to Norfolk, through Canaan, and small sections at Winsted and Hartford.

There is a rather large number of men living today who can be classed as "old-timers" on the C. N. E. During the past four or five years, while gathering material for this paper, I have had very pleasant visits with some of these railroaders of the old days and I have found them willing and anxious to assist me in my undertaking. A few of them deserve mentioning, and they are:

Edward B. Smith, Millerton, N. Y., Engineer, now retired. Commenced as fireman on the H. & C. W., and continued with the road, through all the changes, to New Haven ownership.

Thomas Martin, Lakeville, Conn. Station Agent, now retired. Started with the road when it was the Connecticut Western and has been pensioned but one year.

David A. Warwick, Millerton, N. Y. Passenger conductor, now retired. Commenced with the N. D. & C., as a brakeman out of Dutchess Junction and remained until pensioned by the New Haven.

Martin J. Wheeler, Silvernails, N. Y. Station Agent now at Berea, N. Y. Has been telegrapher and station agent since the C. N. E. & W. days.

Frank B. Fisher, Maybrook, N. Y. Road Foreman of Engines. One of the early firemen during C. N. E. & W. control.

William J. Cole, Poughkeepsie, N. Y. Passenger conductor, now retired. He was in the service of the C. N. E. and its predecessors fifty years.

George Lown, Poughkeepsie, N. Y. Freight conductor. Was one of the early P. & E. men and is now yard conductor at Poughkeepsie.

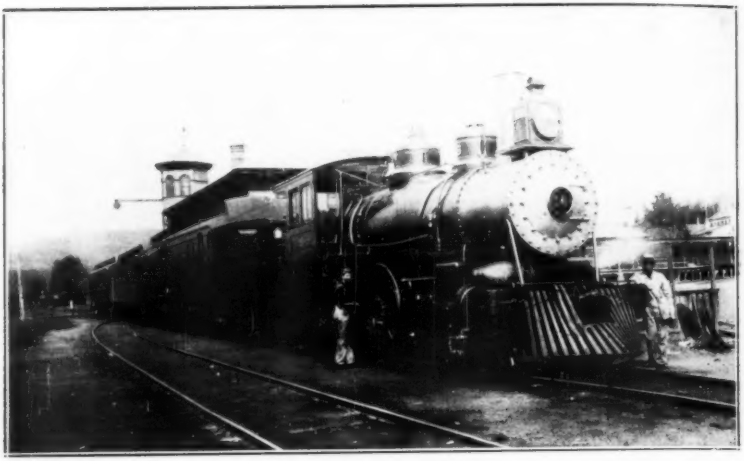
Charles Ott, Kearney, N. J. Crossing Flagman, now retired. Said to be the only living man who was employed by the Dutchess & Columbia. Had been on the Main Street crossing at Matteawan nearly forty years up to his retirement two years ago.

Forrest B. Annis, Beacon, N. Y. Engineer, retired. One of the firemen on the N. D. & C. shortly after the reorganization of the company.

John Holcomb, Winsted, Conn. Engineer, retired. Was a fireman on the C. W., and became an engineer after the formation of the H. & C. W. Has been on a pension since New Haven control.

Another gentleman whom I have never met but have heard much of should be mentioned here, and that is John F. Jones, now of Claremont, N. H., believed to be over ninety years of age. He was one of the early officials of the H. & C. W., and was superintendent of the road in 1878 when the bridge across the Farmington River near Tariffville collapsed throwing two locomotives and four coaches into the stream. The story of this wreck has been told many times and it need not be repeated here.

I am sure that our members will agree that Captain Robinson has made an interesting contribution on the history of the roads that became a part of the Central New England Railway.



C. N. E. #16—Rogers, 1882.

P. R. & N. E. #19—Baldwin, 1888.

Turning now to the locomotives, the preparation of this roster has been no easy task on account of the number of roads involved and the lack of locomotive data in their Annual Reports. At the outset, your Editor wishes to express his appreciation to the American Locomotive Co., the Baldwin Locomotive Works, the New Haven R. R., and to Messrs. George P. Becker and Capt. W. W. Robinson for their assistance. In presenting this roster it seems best to follow the chronological order of the roads as outlined by Captain Robinson. So far as I can observe there was no renumbering of locomotives until the formation of the Central New England. The series of numbers started by the H. & Ct. W. served, together with the replacements for the C. N. E. & W. and the P. R. & N. E.

CONNECTICUT WESTERN and HARTFORD & CONNECTICUT WESTERN ROADS

1	State Line	Rogers #—— 1871 15x22" 48¾" double ender Rebuilt to 0-4-0—scrap prior to C. N. E.
2	City of Hartford	Rogers #—— 1871 15x22" 60" 4-4-0 Sold in 1888 to Shepaug R. R. for $3000.00
3	Winstead	Rogers #—— 1871 16x24" 60" 4-4-0 Sc prior to CNE
4	Salisbury	Rogers #—— 1871 16x24" 60" 4-4-0 Sc prior to CNE
5	Norfolk	Rogers #—— 1871 16x24" 60" 4-4-0 Sc prior to CNE
6	Bloomfield	Rogers #—— 1872 16x24" 54" 4-4-0 Sc prior to CNE Purchased from Boston & New York Air Line.
7	Canton	Rogers #—— 1872 17x22" 54" 4-4-0 Sc prior to CNE
8	Canaan	Rogers #—— 1872 17x22" 54" 4-4-0 Sc prior to CNE
9	Simsbury	Rogers #—— 1873 17x22" 54" 4-4-0 Sc prior to CNE
10	Tariffville	Rogers #2429 1875 17x22" 54" 4-4-0 Sc prior to CNE
11	Lakeville	Rogers #2433 1875 17x22" 54" 4-4-0 Sold to Housatonic R. R.
	Falls Village	Rogers # 435 1853 13½x22" 60" 4-4-0 Purchased from the Housatonic R. R. by the Ct. Western and sold by them to the R & C and became their #1, but never carried an H & Ct. W. number
11	R & C #2	Cooke # 900 1873 18x24" ? 4-4-0 Sc prior to CNE
12	R & C #3	Cooke # 960 1873 16x22" ? 0-4-0 Sc prior to CNE
13	R & C #4	Cooke # 943 1873 18x24" ? 4-4-0 Sc prior to CNE
14	R & C #5	Cooke # 974 1873 17x24" ? 4-4-0 Sold—1889
15		Rogers #3052 1882 18x24" 62" 4-4-0 CNE 15-219-34
16		Rogers #3096 1882 18x24" 62" 4-4-0 CNE 16-220-35
17		Rogers #3299 1882 18x24" 62" 4-4-0 CNE 17-221-36
18		Rogers #3346 1882 18x24" 62" 4-4-0 CNE 18-222-37
19		Rogers #4108 1889 19x24" 56" 2-6-0 CNE 22-1

The H. & Ct. W. was taken over by the Central New England & Western in 1889. So far as we can learn the engines were simply re-lettered. Eighteen new engines were acquired, however, four of which were assigned numbers formerly carried by the H. & Ct. W. engines.

11		Baldwin	#12413	1892	21x24"	62"	4-6-0	CNE	11-211-25-47
12		Baldwin	#12412	1892	21x24"	62"	4-6-0	CNE	12-212-26
13		Baldwin	#12390	1891	21x24"	62"	4-6-0	CNE	13-213-27
14		Baldwin	#12391	1891	21x24"	62"	4-6-0	CNE	14-214-28-48
20		Baldwin	#11208	1890	18x24"	62"	4-4-0	CNE	20-224-32
21	Hud. Conn #1	Baldwin	# 9571	1888	18x24"	63"	4-4-0	CNE	21-225-33
22	Hud. Conn #2	Baldwin	# 9572	1888	18x24"	63"	4-4-0	CNE	19-223-31
23	Hud. Conn #3	Baldwin	# 9828	1889	19x24"	54"	2-6-0	CNE	23-2
24	Hud. Conn #4	Baldwin	# 9863	1889	20x24"	50"	2-8-0	CNE	24-24
25	Hud. Conn #5	Baldwin	# 9860	1889	20x24"	50"	2-8-0	CNE	25-NH257-25-75
26	Hud. Conn #6	Baldwin	# 9861	1889	20x24"	50"	2-8-0	CNE	26-NH258-26
27		Baldwin	#11217	1889	20x24"	50"	2-8-0	CNE	27-27
28		Baldwin	#11214	1890	20x24"	50"	2-8-0	CNE	28-28
29		Baldwin	#10839	1890	20x24"	50"	2-8-0	CNE	29-29
30		Baldwin	#10843	1890	20x24"	50"	2-8-0	CNE	30-30
31		Baldwin	#11476	1890	20x24"	50"	2-8-0	CNE	31-31
32		Baldwin	#11477	1890	20x24"	50"	2-8-0	CNE	32-32
33		Baldwin	#11478	1890	20x24"	50"	2-8-0	CNE	33-33

From 1892-1899 the road was known as the Philadelphia, Reading & New England. The engines were relettered but we have no record of a renumbering. This road purchased ten new engines, three of which were assigned numbers in the old H. & Ct. W. series.

4	Baldwin	#13857	1893	12&20x24"	68"	4-4-0	CNE 4-200-229-41
7	Baldwin	#13858	1893	12&20x24"	68"	4-4-0	CNE 7-201-231-43
8	Baldwin	#13859	1893	12&20x24"	68"	4-4-0	CNE 8-202-230-42
34	Baldwin	#13847	1893	13½&23x24"	51"	2-8-0	CNE 34-34-85
35	Baldwin	#13848	1893	13½&23x24"	51"	2-8-0	CNE 35-35-86
36	Baldwin	#13849	1893	13½&23x24"	51"	2-8-0	CNE 36-36-87
37	Baldwin	#13850	1893	13½&23x24"	51"	2-8-0	CNE 37-37-88
38	Baldwin	#13851	1893	13½&23x24"	51"	2-8-0	CNE 38-38-89
39	Baldwin	#13852	1893	13½&23x24"	51"	2-8-0	CNE 39-39-90
40	Baldwin	#13853	1893	13½&23x24"	51"	2-8-0	CNE 40-40

In 1899 the Central New England Ry. was formed from the P. R. & N. E. The engines were simply relettered and there was no change in the numbers until 1907. In that year two roads were acquired by the C. N. E. The first of these, the Newburgh, Dutchess & Connecticut has already been made the subject of an article in our Bulletin No. 34. Mr. Stuart lists the N. D. & C. locomotives as follows:

	Tioronda	Baldwin	# 707	1856	4-4-0	14x24"	60"	
	From North Pennsylvania	R. R. in		1869				
	Washington	Br. & Kneeland	#——	1857	4-4-0			
	Pine Plains	Br. & Kneeland	#——	1857	4-4-0			
1	Millbrook	Grant	#——	1870	4-4-0	17x24"	62"	
2	Bangall	Grant	#——	1871	4-4-0	17x24"	62"	CNE 212
3	Verbank	Schenectady	#——	1871	4-4-0	17x24"	62"	
4	La Grange	Schenectady	#——	1871	4-4-0	17x24"	62"	CNE 213
5		Brooks	#——	1873	4-4-0	16x24"	62"	CNE 214
6		Brooks	#——	1873	4-4-0	16x24"	62"	CNE 215
7		Brooks	#——	1873	4-4-0	16x24"	62"	CNE 216

Nos. 5-7 were purchased from the New York, Boston & Montreal and were numbered 5, 6 and 15.

8		Cooke	#——	1873	2-6-0	17x24"	56"	
8		Baldwin	#14276	1895	4-4-0	18x24"	69"	CNE 226-38
9	Gen. Schultze	Rogers	# ——	1880	2-4-4	?	?	
9		Baldwin	#21016	1902	4-4-0	19x24"	69"	CNE 227-39
10		Baldwin	#19461	1901	4-4-2	18x24"	69"	CNE 228-40

The second road acquired by the C. N. E. in 1907 was the Poughkeepsie & Eastern Ry. We know that the P & E frequently renumbered their engines but at this late day it is almost impossible to follow that here. From the best sources of information we know they had the following locomotives and possibly others:

		Cooke	#	736	1871	4-4-0	12x22"	?	
1	Russell Sage	Cooke	#	2263	1893	4-4-0	17x24"	60"	CNE 203
2		Cooke	#	——	1873	4-4-0	17x24"	?	
2	Olivia	Rogers	#	4848	1893	4-4-0	17x24"	62"	CNE 204
3		Cooke	#	——	1872	4-4-0	17x24"	?	
3	Poughkeepsie	Portland	#	——	1881	4-4-0	?	?	
4		Cooke	#	——	1873	2-6-0	17x24"	56"	Fr. NYB&N
4		Baldwin	#	——	1872	4-4-0	?	?	
4		Baldwin	#	3046	1872	4-6-0	18x22"	56"	CNE 4
	Formerly Pennsylvania R. R.		#	560					
5		Dickson	#	405	1883	2-6-0	18x24"	56"	CNE 5
	Formerly Delaware & Hudson		#	189					
6		Rogers	#	——	——	4-4-0	17x24"	66"	CNE 205
	From New York Central & Hudson River R. R.								
7		Schenectady	#	1706	1883	4-4-0	18x24"	63"	CNE 206
	From New York Central & Hudson River R. R.								

In 1907 the Central New England R. R. renumbered all of their locomotives and there was another renumbering between the years 1912 and 1916. The C. N. E. locomotives retained their identity until the road was actually merged with the New Haven in 1927 and at that time they were relettered and assigned numbers in the New Haven series. For convenience, the C. N. E. engines will be listed according to the 1907 arrangement of numbers, the number following indicates the renumbering between 1912 and 1916.

1 ——	Rogers	#	4108	1889	2-6-0	19x24"	56"	H&CtW 19	CNE 22
	Sc. 12-31-1911								
2 ——	Baldwin	#	9828	1889	2-6-0	19x24"	54"	H&CtW 23	
	Sc. prior to 1912								
3 ——	Vacant								
4 ——	Baldwin	#	3046	1872	4-6-0	20x24"	56"	P&E 4	
	Sc. 7-1908								
5 ——	Dickson	#	405	1883	2-6-0	18x24"	56"	P&E 5	
	Sc. 4-1908								
6—23	Vacant								
24 ——	Baldwin	#	9863	1889	2-8-0	20x24"	50"	CNE&W 24	
	Sc. 4-22-1905								
25 75	Baldwin	#	9860	1889	2-8-0	20x24"	50"	CNE&W 25	
	Sc. prior to 1927. In N. H. Service No. 257								
26 ——	Baldwin	#	9861	1889	2-8-0	20x24"	50"	CNE&W 26	
	Sold 11-21-1907. In N. H. Service No. 258								
27 ——	Baldwin	#	11217	1889	2-8-0	20x24"	50"	CNE&W 27	
	Sold 1907								
28 ——	Baldwin	#	11214	1889	2-8-0	20x24"	50"	CNE&W 28	
	Sold 1907								
29 ——	Baldwin	#	10839	1890	2-8-0	20x24"	50"	CNE&W 29	
	Sold 1907								
30 ——	Baldwin	#	10843	1890	2-8-0	20x24"	50"	CNE&W 30	
	Sold 1907								
31 ——	Baldwin	#	11476	1890	2-8-0	20x24"	50"	CNE&W 31	
	Sc. prior to 1927								

32	——	Baldwin	#11477	1890	2-8-0	20x24"	50"	CNE&W 32	
			Sc. 12-31-1911						
33	——	Baldwin	#11478	1890	2-8-0	20x24"	50"	CNE&W 33	
			Sold 1907						
34	85	Baldwin	#13847	1893	2-8-0	13½&23x24"	51"	PR&NE 34	
		Rebuilt				20x24"	Sc. 6-1925		
35	86	Baldwin	#13848	1893	2-8-0	13½&23x24"	51"	PR&NE 35	
		Rebuilt				20x24"	Sc. 10-1925		
36	87	Baldwin	#13849	1893	2-8-0	13½&23x24"	51"	PR&NE 36	
		Rebuilt				20x24"	Sc. 6-1925		
37	88	Baldwin	#13850	1893	2-8-0	13½&23x24"	51"	PR&NE 37	
		Rebuilt				20x24"	Sc. 6-1925		
38	89	Baldwin	#13851	1893	2-8-0	13½&23x24"	51"	PR&NE 38	
		Rebuilt				20x24"	Sc. 6-1925		
39	90	Baldwin	#13852	1893	2-8-0	13½&23x24"	51"	PR&NE 39	
		Rebuilt				20x24"	Sc. 6-1925		
40	——	Baldwin	#13853	1893	2-8-0	13½&23x24"	51"	PR&NE 40	
			Sold 1907						
41	100	Schenectady	#29991	1904	2-8-0	20x24"	50"	Sc. 7-1925	
42	101	Schenectady	#29992	1904	2-8-0	20x24"	50"	Sc. 10-1926	
43	102	Schenectady	#29993	1904	2-8-0	20x24"	50"	Sc. 7-1925	
44	103	Schenectady	#29994	1904	2-8-0	20x24"	50"	Sc. 10-1926	
45	104	Schenectady	#29995	1904	2-8-0	20x24"	50"	Sc. 7-1925	
46	105	Rogers	#39036	1905	2-8-0	20x24"	50"	Sc. 7-1925	
47	106	Rogers	#39037	1905	2-8-0	20x24"	50"	Sc. 7-1925	
48	107	Rogers	#39038	1905	2-8-0	20x24"	50"	Sc. 6-1926	
49	108	Rogers	#39039	1905	2-8-0	20x24"	50"	Sc. 1-1927	
50	109	Rogers	#39040	1905	2-8-0	20x24"	50"	Sc. 1-1926	
51	110	Rogers	#39041	1905	2-8-0	20x24"	50"	Sc. 8-1927	
52	111	Rogers	#39042	1905	2-8-0	20x24"	50"	Sc. 1-1926	
53	112	Rogers	#39043	1905	2-8-0	20x24"	50"	Sc. 1-1926	
54	113	Rogers	#39044	1905	2-8-0	20x24"	50"	Sc. 1-1927	
55	114	Rogers	#39045	1906	2-8-0	20x24"	50"	Sc. 7-1925	
56	115	Rogers	#44327	1907	2-8-0	20x24"	50"	Sc. 1-1926	
57	116	Rogers	#44328	1907	2-8-0	20x24"	50"	Sc. 6-1926	
58	117	Rogers	#44329	1907	2-8-0	20x24"	50"	Sc. 3-1928	
59	118	Rogers	#44330	1907	2-8-0	20x24"	50"	Sc. 3-1928	
60	119	Rogers	#44331	1907	2-8-0	20x24"	50"	Sc. 7-1925	
61	120	Rogers	#44332	1907	2-8-0	20x24"	50"	Sc. 7-1925	
62—99		Vacant							
100	1	Schenectady	#29989	1904	0-6-0	20x24"	51"		
			Re NH 2350	Sc. 9-1927. In NH Service No. 2400					
101	2	Schenectady	#29990	1904	0-6-0	20x24"	51"		
			Re NH 2351	Sc. 1-31-1935. In NH Service No. 2401					
102	3	Schenectady	#42504	1907	0-6-0	20x24"	51"		
			Re NH 2352	Sold 5-1930					
103	4	Schenectady	#42744	1907	0-6-0	20x24"	51"		
			Re NH 2353	Active					
104	5	Schenectady	#48025	1910	0-6-0	20x24"	51"		
			Re NH 2354	Sc. 3-8-1930					
105	6	Schenectady	#48026	1910	0-6-0	20x24"	51"		
			Re NH 2355	Sc. 12-1935					
106		Vacant							
107	10	Schenectady	#52813	1913	0-8-0	22x28"	51"		
			Re NH 10—	Active					
108	11	Schenectady	#52814	1913	0-8-0	22x28"	51"		
			Re NH 11—	Active					
109	12	Schenectady	#52815	1913	0-8-0	22x28"	51"		
			Re NH 12—	Active					

110—199		Vacant		
200		Renumbered 229		
201		Renumbered 231		
202		Renumbered 230		
203	—	Cooke	# 2263 1893 4-4-0 18x24″ 60″ P & E 1 Sc. 10-20-1913	
204	—	Rogers	# 4848 1893 4-4-0 17x24″ 62″ P & E 2 Sc. 12-31-1913	
205	—	Rogers	# —— —— 4-4-0 17x24″ 66″ P & E 6 Sc. 9-29-1909	
206	—	Schenectady	# 1706 1883 4-4-0 18x24″ 63″ P & E 7 Sc. 11-9-1908	
207—209		Vacant		
210	—	Rogers	# 2429 1875 4-4-0 17x22″ 62″ H & CtW 10 Sc. 1907	
211	25	Baldwin	#12413 1892 4-6-0 21x24″ 62″ CNE&W 11 Re 47—Sc. 7-1925	
212	26	Baldwin	#12412 1892 4-6-0 21x24″ 62″ CNE&W 12 Sc. prior to 1922	
213	27	Baldwin	#12390 1891 4-6-0 21x24″ 62″ CNE&W 13 Sc. prior to 1922	
214	28	Baldwin	#12391 1891 4-6-0 21x24″ 62″ CNE&W 14 Re 48—Sc. 4-1926	
215	—	Brooks	# —— 1873 4-4-0 16x24″ 62″ ND&C 6 Sc. 2-5-1913	
216	—	Brooks	# —— 1873 4-4-0 16x24″ 62″ ND&C 7 Sc. 9-9-1909	
217—218		Vacant		
219	—	Rogers	# 3052 1882 4-4-0 18x24″ 62″ H&CtW 15 Sc. 4-1908	
220	35	Rogers	# 3096 1882 4-4-0 18x24″ 63″ H&CtW 16 Sc. 11-20-1919	
221	36	Rogers	# 3299 1882 4-4-0 18x24″ 63″ H&CtW 17 Sc. 10-1925	
222	37	Rogers	# 3346 1882 4-4-0 18x24″ 63″ H&CtW 18 Sc. 7-1926	
223	31	Baldwin	# 9572 1888 4-4-0 18x24″ 63″ CNE&W 22-19 Sc. prior to 1922	
224	32	Baldwin	#11208 1890 4-4-0 18x24″ 63″ CNE&W 20 Sc. prior to 1922	
225	33	Baldwin	# 9571 1888 4-4-0 18x24″ 63″ CNE&W 21 Sc. prior to 1922	
226	38	Baldwin	#14276 1895 4-4-0 18x24″ 69″ ND&C 8 Sc. 3-1925	
227	39	Baldwin	#21016 1902 4-4-0 19x24″ 69″ ND&C 9 Sc. 7-1926	
228	40	Baldwin	#19461 1901 4-4-2 18x24″ 69″ ND&C 10 Sc. 7-1926	
229	41	Baldwin Rebuilt	#13857 1893 4-4-0 12&20x24″ 69″ PR&NE 4 18x24″ Sc. prior to 1927	
230	42	Baldwin Rebuilt	#13859 1893 4-4-0 12&20x24″ 69″ PR&NE 8 18x24″ Sc. prior to 1927	
231	43	Baldwin Rebuilt	#13858 1893 4-4-0 12&20x24″ 69″ PR&NE 7 18x24″ Sc. prior to 1927	
232—299		Vacant		
300	50	Schenectady	#46276 1909 4-6-0 20x26″ 69″ Sc. 3-1928	
301	51	Schenectady	#46277 1909 4-6-0 20x26″ 69″ Sc. 3-1928	
302	52	Schenectady	#46278 1909 4-6-0 20x26″ 69″ Sc. 3-1929	
303—399		Vacant		
400	125	Brooks	#49098 1910 2-6-0 20x28″ 63″ NH 550 Re NH 550—Sc. 9-1929	

401	126	Brooks	#49099 1910 2-6-0 20x28" 63"	NH 551
			Re NH 551—Sc. 12-1935	
402	127	Brooks	#49100 1910 2-6-0 20x28" 63"	NH 552
			Re NH 552—Sc. 3-31-1935	
403	128	Brooks	#49101 1910 2-6-0 20x28" 63"	NH 553
			Re NH 553—Sc. 3-31-1935	
404	129	Brooks	#49102 1910 2-6-0 20x28" 63"	NH 554
			Re NH 554—Sc. 12-1935	
405	130	Brooks	#49103 1910 2-6-0 20x28" 63"	NH 555
			Re NH 555—Sc. 3-31-1935	
406—499		Vacant		
500	150	Brooks	#51717 1912 2-8-0 24x32" 63"	Re NH 150 Active
501	151	Brooks	#51718 1912 2-8-0 24x32" 63"	Re NH 151 Active
502	152	Brooks	#51719 1912 2-8-0 24x32" 63"	Re NH 152 Active
503	153	Brooks	#51720 1912 2-8-0 24x32" 63"	Re NH 153 Active
504	154	Brooks	#51721 1912 2-8-0 24x32" 63"	Re NH 154 Active
505	155	Brooks	#51722 1912 2-8-0 24x32" 63"	Re NH 155 Active
506	156	Brooks	#51723 1912 2-8-0 24x32" 63"	Re NH 156 Active
507	157	Brooks	#51724 1912 2-8-0 24x32" 63"	Re NH 157 Active
508	158	Brooks	#51725 1912 2-8-0 24x32" 63"	Re NH 158 Active
509	159	Brooks	#51726 1912 2-8-0 24x32" 63"	Re NH 159 Active
510	160	Brooks	#51727 1912 2-8-0 24x32" 63"	Re NH 160 Active
511	161	Brooks	#51728 1912 2-8-0 24x32" 63"	Re NH 161 Active
512	162	Brooks	#51729 1912 2-8-0 24x32" 63"	Re NH 162 Active
513	163	Brooks	#51730 1912 2-8-0 24x32" 63"	Re NH 163 Active
514	164	Brooks	#51731 1912 2-8-0 24x32" 63"	Re NH 164 Active

The following locomotives never carried numbers in the 1907 series:

45	Norwood Shops	1903 4-4-0 18x26" 69"	Ex NH 1504
		Re NH 1504—Sc. 11-1927	
46	New Haven Shops	1903 4-4-0 18x26" 69"	Ex NH 1506
		Re NH 1506—Sc. 1-1927	
131	Rhode Island	#25594 1893 2-6-0 20x26" 63"	Ex NH 545
		Re NH 545—Sc. 9-1927	
180	Schenectady	#55725 1916 2-8-2 26x32" 63"	Ex NH 3105
		Re NH 3105—Active	
181	Schenectady	#55726 1916 2-8-2 26x32" 63"	Ex NH 3106
		Re NH 3106—Active	
182	Schenectady	#55727 1916 2-8-2 26x32" 63"	Ex NH 3107
		Re NH 3107—Active	
13-27	Schenectady	#63400-14 1922 0-8-0 25x28" 51"	Re NH 3420-3434
28-32	Schenectady	#63457-61 1922 0-8-0 25x28" 51"	Re NH 3415-3419

Three engines from the N. D. & C. were assigned Nos. 212-214 when that road was taken over by the C. N. E. in 1907. Apparently they did not long survive for their numbers were immediately taken by those that appear in the above series:

212	—— Grant	# —— 1871 4-4-0 17x24" 62"	ND&C 2
213	—— Schenectady	# —— 1871 4-4-0 17x24" 62"	ND&C 4
214	—— Brooks	# —— 1873 4-4-0 16x24" 62"	ND&C 5

In closing this article I want to make a few corrections on the list of New York & New England locomotives as published in our Bulletin No. 49. Subsequent to the printing of this material there was found an

inventory of the N. Y. & N. E. equipment dated 1883 and the following have been noted:

3 The 1883 inventory gives the cylinders as 14x22".
15 The old "Walpole" was evidently rebuilt by Hinkley as stated in the text and a new engine #15 0-4-0 type was built by the road in 1875 15x22" 50".
31 This was a 2-6-0 type not a 4-4-0 type.
41 Rhode Island 1879. The inventory states this was a 4-6-0.
45 Hinkley, 1881, 4-4-0 appears in the inventory under #102 and there was evidently an exchange of numbers between the two engines.
46 Hinkley, 1881, 2-8-0 originally # 101.
52 Hinkley, 1881, 4-4-0 like the #45, appears in the inventory under #103 and there was an exchange of numbers.
101 Rhode Island, 1883, 2-6-0 may have originally been 151.

The list of locomotives as published in Bulletin No. 49 is substantially correct save in the instances of Nos. 15, 31 and 41. The inventory of 1883 gives evidence of some renumbering and this has been recorded as above but in the final analysis the published list is correct.

Mr. George A. Merrick of the New Haven R. R. was so interested in the old steam car on the New England that he has submitted a brief description which I am glad to reproduce here.

The final installment of the New Haven locomotives which will include the renumbering and the newer locomotives will appear in Bulletin No. 52.

N. Y. & N. E. Steam Operated Car 1098

New Haven Railroad records show that the car was built by Wason for the N. Y., N. H. & H. R. R. in 1884. It was a diner and carried No. 271. It was sold or transferred to the N. Y. & N. E., date unknown, where it was still a diner and carried No. 98. No. 198 seems to have been assigned to it in 1898. The 1903 description books, both car and locomotive, carry it as 1098. It was sold to Fitzhugh & Luther 12-21-1907 for $3,000.00.

The work of converting it from a dining car was done at Norwood. The unit was sent to Schenectady where the motor truck was built and applied. It returned to the N. Y. & N. E. under its own power.

An illustrated article in the November 27, 1897 issue of the *Scientific American* gives a good description of the power unit. It also shows the car numbered "New England" 198. It has panelled side sheathing and a six wheel rear truck. Later pictures show a four wheel rear truck and conventional narrow sheathing with the car numbered N.Y.N.H. & H. 1098.

The motor truck had a wheel base of 8′ 0″ and used 42″ diameter driving wheels. The cylinders were 12″x16″ with valves operated by a Walschaert valve gear.

A vertical fire tube boiler was mounted on the motor truck frame with a ring around the outside of the boiler. There was a similar ring built into the car underframe and between the two ran 125 1½″ hardened steel balls. This construction took the place of a conventional center plate and made it unnecessary to have flexible joints for steam and air lines.

The furnace door was at the front of the boiler just behind the engineer's position. Coke was used for fuel. Fuel and water for a 60 mile trip could be carried. The water was carried in the cylindrical tanks under the car body.

An air reservoir was mounted at the rear of the truck frame. Air compressor was studded to the rear of the boiler. The reverse shaft was mounted behind the front wheels not far above the rail.

The unit weighed 115,000 lbs., of which 70,000 lbs. was on the motor truck. On test it ran five miles in 5′ 55″, the fastest miles being at the rate of 53.7 M.P.H.

Early Rules and the Standard Code

By Warren Jacobs

The Baker Library today has one of the largest collections of early railroad rules to be found in this country. On the various New England roads, such as the Old Colony for example, this Society owns a complete set of its operating rules, from the opening to Plymouth in 1845, to its lease to the New Haven in 1893.

To assimilate all these early rules and to bring out their historical features, quaint wording, and interesting comparisons with the rules of the present day, requires considerable care. In order to save this article from being either too dry reading or too technical, we shall, therefore, try to be as literal as the new brakeman, who on being asked by the Rules Examiner, "What is a fixed signal?", replied: "A signal that's been repaired".

There will be no discussion on the fine points of the Rules for movement by Train Orders. This can be left to the "smoke committee", as they light their pipes and gather around the old railroad stove. How many times this has been done in the past, and a novice at the business would learn a lot listening to some of the old-timers, for they sure were good. Incidentally the "standard pipe", in freight train service on the New England roads forty years ago, was the immortal "T. D."

A little over a century ago our first railroad superintendents had a difficult task confronting them, in the preparation of a set of rules, or instructions for the running trains, all the more so because they had nothing to go on, or refer to, but their own knowledge. The result was not only excellent but reflected great credit on these gentlemen. We think today of Safety-First as being a modernism, yet it dates back to the very beginning, when the first rules set forth: "Take the Safe Course and run no Risk", which is the very foundation of the safety movement.

Among the earliest railroad laws of Massachusetts, enacted in 1835, were those relating to the use of the whistle and bell and they were, of course, incorporated in the first rules; "The bell must be rung 80 rods before crossing a road and rung until it is past", has come down to us at the present day, except the language in the modern book varies slightly. This applies also to other of the early rules.

One of the most interesting sets of rules we have at the Baker Library are the "Instructions for Conductors and Enginemen While Passing Over The Road." These are the first rules of the Boston & Providence Railroad in 1835, when the road was opened to Providence.

1—The Conductor has sole charge of the train; he will direct the Engineman when to STOP and when to START.

2—The Conductor will report immediately on his arrival at the Depots, any disobedience of orders on the part of the Engineman.

3—Conductors of morning trains—which leave Boston and Providence at the same hour—will pass each other at the Foxboro turn-out;

if both trains arrive at the same time, the train FROM Boston will take the turn-out.

4—The Steam Boat train from Boston will proceed without other than the stops necessary to discharge and receive passengers at Dedham Branch, Canton, Mansfield and Attleboro. The Conductor of this train will, if the Steam Boat train from PROVIDENCE have not arrived before his departure, proceed with great caution, sounding his bell at SHORT INTERVALS while passing round curves.

5—The Steam Boat train from PROVIDENCE will proceed with the greatest care; the Conductor will keep a good look-out, sending one of his Brakemen to LOOK ROUND curves, if he have any doubt with respect to the vicinity of a train which may be expected approaching him. The Conductor of this train is positively ordered not to leave a turn-out, if he have any reasonable expectation of meeting another train before he can reach the next turn-out, he will detain the train on a turn-out rather than run any risk whatever—he will keep constantly in his mind that the position of his train on the road is not known to Conductors and enginemen of trains approaching him.

6—Trains will at all times move around curves slowly and with a good look-out; the engine bell will be rung at intervals of time, until the engine has passed from the curve on to the straight line.

7—The engine bell will be rung when a train is within eighty rods of a "Crossing" (WHICH IT WILL APPROACH SLOWLY) and will continue to be rung until the train occupies the "Crossing".

8—Conductors will daily compare their time with the time at the Depots.

9—Trips will be made in not less than two and a half hours.

10—Conductors will, when the train arrives at Seekonk, going to Providence, look out for a blue flag on the Tockwotten Hotel; and if one be displayed, the train will take the Seekonk turn-out, and remain there until the flag is lowered;—and also the signal on the Wood House, at India Point; if the black board be across the staff, STOP, as the draw of the bridge is open.

11—The road-crossings at Guy Carlton's in Roxbury, at the Toll Gate, and near Mr. Lowell's will be passed particularly slow.

12—Nettings over the smoke-pipes will always be fastened down, while the engine is running over the road.

13—Rule at "Worcester Rail-Road Crossing"—When a Worcester train is COMING IN, the Providence train will stop; at all other times the Providence train goes ahead. Always ring the bell in foggy weather, or at night, when within 100 rods of this crossing.

14—If, on the arrival of a train at a turn-out, where a meeting with another train is usual, and the expected train has not arrived, the Conductor, after remaining on the turn-out fifteen minutes, will send a Brakeman forward with orders to proceed as rapidly as possible; he will carry in his hand the signal of a Brakeman viz; a blue flag. If, in fifteen minutes after the Brakeman has started, the expected train shall not have arrived, nor the Brakeman returned, the Conductor will

proceed with his train, moving with due CARE AND PRUDENCE. A train which may be detained on the road, from any cause, more than thirty minutes, BEFORE ARRIVING AT THE TURN-OUT, WHERE A MEETING IS USUAL AND EXPECTED, and is afterward able to proceed, will do so with GREAT CARE. The Conductor of this train will recollect the rule which requires the Conductor of the train expecting to meet him at any particular turn-out to wait THIRTY MINUTES, and then proceed,—his calculations will be made accordingly. The Conductor of a train thus delayed, will never pass his train round a curve without sending a Brakeman ahead, who will take a station at the extreme end of the curve, holding conspicuously a blue flag.

The original line of the road was from Boston to East Providence, the present main line from East Junction to Boston Switch, was not opened until 1848.

These first rules are not signed, but there is no doubt they originated with William Raymond Lee, who was the first Superintendent, and a notable man.

William Raymond Lee was born in Boston August 19, 1807 and entered the United States Military Academy at West Point and was at West Point with Jefferson Davis. He was appointed by Major William Gibbs McNeill as his assistant in the construction of the Boston and Providence Railroad and on its completion was appointed its superintendent. In 1861 he was commissioned by Gov. Andrew, Colonel of the 20th Massachusetts Infantry, was taken prisoner at Balls Bluff and confined in Libby. While there he was held as hostage by Jefferson Davis, who had known him at West Point, for the safety of the crew of the privateer "Lady Jeff Davis," who the Federal Government intended to treat as pirates, but which the Confederates insisted should be treated as prisoners of war. They were finally so treated, but not until several months had elapsed, during which time Colonel Lee faced the prospect of hanging. He died in Boston in December 1891.

The above quoted rules give a very fair picture of the operating rules of the period up to 1840, but before proceeding with the next decade, from 1840 to 1850, we will quote two rules of the Eastern Railroad, opened between East Boston and Salem in 1838, and which are nothing short of a comic at this day:

"When anything shall happen to a train to render assistance necessary, let a Brakeman be dispatched to the nearest point for assistance and let him get on horseback as soon as possible".

"In case a train is over one hour late the Depot-Master at Salem or Lynn will immediately start on horseback to learn the cause of the delay".

1840 - 1850

The Old Colony Railroad was chartered on March 16, 1844 to construct a road from Boston to Plymouth and on July 21, 1845 the directors elected Joseph H. Moore to be Superintendent. The road was opened for traffic on November 10, 1845.

Joseph H. Moore was a former Boston & Worcester conductor and one of the original conductors of that road in 1835. He was, therefore, an experienced railroad man for that day and made the first rules of the Old Colony Railroad. In 1852 he resigned to accept a position as Superintendent of the Michigan Southern and Northern Indiana R. R. and from then on all trace of him is lost.

Mr. Moore deserves a place in railroad history, as the originator of the Positive Meet on single-track, which dates from the beginning of the Old Colony Railroad and remained in effect during its entire existence as an operating company, from 1845 to 1893, when it was leased to the New Haven.

In 1894 the Positive Meet was adopted by the New Haven and is still in use to the present day. In 1914 when a new book of Rules was being put into effect a vote was taken of the engineers of the New Haven system and out of 1710 engineers only nine voted against the retention of the Positive Meet.

Mr. J. A. Droege, formerly General Manager of the New York, New Haven and Hartford, in an address before the Association of Railroad Superintendents in 1925 on "Some Thoughts On Train Schedules and Dispatching Methods" gives able arguments for the Positive Meet. They are:

1. Simplification by eliminating, to a great extent, the ever-present complication incident to moving trains by train orders.

2. Minimizing delays and correspondingly avoiding high speed made necessary to overcome the delays slowing down or stopping heavy trains to get orders and by allowing them to keep moving under the positive assurance that they have the right to go to the schedule meeting point without additional help.

3. Increased confidence in the minds of enginemen and others as to their right to proceed to a schedule meeting point for opposing trains of the same class.

4. Reduced number of train orders; the system takes care of conditions which would otherwise require them.

5. Reduced liability to serious delay because of failures of communicating facilities.

6. Simplification of time-tables through removal of many detailed instructions and footnotes, often of a confusing and contradictory nature.

Mr. Droege also said: "If the principal roads of this country were to adopt the positive meet it would probably eliminate a great mass of interrogatories of the "puzzle" or "catch" type regarding rules, train orders, and so on, which appear so frequently in the journals published by and for the train service employes, and in other magazines which conduct columns for that purpose. Most of these conundrums are based on tangles resulting from the intricacies of the superiority by direction methods."

Mr. Droege is an outstanding authority on all operating problems. He is the author of "Passenger Terminals and Trains" and "Freight Terminals and Trains," both standard works in every college in the

country having a transportation course. He became a convert to the positive meet when he came with the New Haven, as he had previously worked for many years on roads having the "Superiority by Direction". He retired from active service November 1, 1931.

Before leaving the subject of the Positive Meet we will reproduce the original rule of 1845, as it was adopted by the New Haven in 1894, and as it is in the rule book of the present day.

The original rule of Mr. Moore in 1845: Passenger Trains will wait at either end of the road and where meeting is designated until the expected train arrives, or is heard from. Freight trains will observe this rule with regard to each other.

As adopted by the New Haven R. R. in 1894.

95a—At meeting or passing places, trains will wait for expected trains of the same or superior class until their arrival, except when otherwise directed in the Time-table, or by special orders.

In the Book of the Present Day:

83—On single track, trains must wait indefinitely at meeting points for opposing trains of the same class unless otherwise directed by train order, except that when a train is entering upon double, three or more tracks, or upon a route other than that upon which the opposing train is scheduled, it need not wait for the opposing train at such points.

Train numbers are of ancient origin, dating from the 1840-1850 period. At first they were numbered regardless of direction, the first train out of Boston in the morning, for example, was number 1 and the last train into Boston at night 31. Odd numbers south or west and even numbers north or east did not come into being until after the train order by telegraph, prior to which orders were written by the Superintendent and handed to the conductor at starting point. There is a fine specimen of one of these very early train orders on the walls of the Baker Library, written in pencil and signed William Raymond Lee, Supt., of whom mention has already been made. The order is to the conductor of a freight train and outlines all the work that is to be done between Boston and Providence.

1850 - 1860

The decade of 1850-1860 marks a most drastic change in train rules, in the train order by telegraph, originated by a Harvard graduate, Charles Minot, then Superintendent of the Erie Railroad, one of the most progressive railroad officials of his day. Mr. Minot was born at Haverhill, Mass., August 30, 1810, and graduated at Harvard in 1828. In 1841 was appointed Superintendent of the Boston and Maine Railroad and in later years became connected with the Erie in the same capacity. It was on September 22, 1851 that Mr. Minot sent the first train order by telegraph. The complete story will be found in Charles Frederick Carter's "When Railroads Were New". Mr. Minot died at Somerville, Mass., December 10, 1866.

It must not be supposed that all railroads immediately adopted the train order by telegraph. Like the air-brake and automatic coupler, it

was a plant of slow growth and it was not for many years that it became general, and still longer before it became universal. Incidentally Eli Hamilton Janney, inventor of the coupler bearing his name, was a Major in the Confederate Army, and invented his coupler while working as a clerk in a dry-goods store in Alexandria, Va.

In the decade 1850-1860 the railroad mileage of the nation jumped from 7475 miles in 1850 to 28,771 miles in 1860 and with this tremendous increase came larger and more powerful engines and heavier cars.

As stated in the beginning, in order to save this article from being too dry reading, we will insert here a rule of the Salem & Lowell R. R. in 1856: "The Superintendent begs leave to remind gentlemen passengers who SPIT, that the car floors cannot be washed while the train is in motion".

If the reader will refer to Dickens' "American Notes" there will be found an interesting description of his travels over the Boston and Lowell Railroad, and of his horror at the great American tobacco-chewing habit.

As illustrating the rules of the 1850-1860 period we will show the General Rules of the Cape Cod Railroad of April 5, 1852:

1st. No Train will leave a station before the card time.

2nd. Freight Trains will not leave the station next preceding a station when a Passenger Train is expected—unless they have the FULL running time specified in the table. All Freight Trains must be kept out of the way of Passenger Trains, as Passenger Trains WILL NOT wait for Freight Trains.

3rd. Gravel Trains will avoid ALL Regular Trains and not run by a station when it is expected to meet a Regular Train, unless it can arrive FULL TEN MINUTES before the Regular Train is due.

4th. All persons employed on the road will be particular to give notice by the red flag, of any obstruction on the road.

5th. Every engineman on approaching a road or switch, should see that the way is clear before he reaches it. If the switch cannot be seen to be right, HALT, until perfectly sure of its position. THE BELL MUST BE RUNG EIGHTY RODS BEFORE CROSSING A ROAD, AND RUNG UNTIL IT IS PASSED.

6th. In cases of any uncertainty as to the occupation of track, a man must be sent ahead and one back, and be kept at least half a mile distant, until the danger is over.

7th. In cases of uncertainty ALWAYS take that course which is SAFE. BE CAREFUL ALWAYS.

8th. A white flag displayed from an engine is a signal that the engine may be expected to return immediately.

9th. Trains or Engines at night, must have a good light behind and in front.

10th. If the Train breaks down or stops, send a man a mile back and one as far forward, to warn any Train that may approach.

11th. When two Engines are running in the same direction, in immediate succession, the first will display a red flag.

Silvanus Bourne, Supt.

Sandwich, April 5, 1852.

These were the critical years of American history, the Civil War period, and the first great war in which the railroad and the telegraph played a prominent part. General Sherman says in his "Memoirs"—"The value of railways is also fully recognized in war, quite as much as, if not more so than, in peace. The Atlanta campaign would have simply been an impossibility without the use of the railroads."

The roads in the South and along the border suffered terribly during the war and there were feats of construction and operation during that period that have never been excelled. While the Government did not mobilize the railroads of the nation as the "United States Railroad Administration", it did take over lines within hostile territory which were designated "United States Military Railroad". In this decade there were not many important changes in rules except that there were incorporated Movement of Trains by Telegraph, by some, but not by all roads.

In 1861 the Portland, Saco & Portsmouth R. R. had the following notice in their rules:—"Employees of the Company disapproving of these rules, or other regulations of the road, or not disposed to aid the Superintendent in carrying them out are requested not to remain in the employ of the road.

As a sample of the Rules of the Civil War period we will take the Regulations of the Concord, Manchester & Lawrence R. R. of October 7, 1861;—

1. The standard time is the Clock in the Passenger Depot at Concord.

2. The First Up and First Down Passenger Trains meet at Salem, N. H.

3. The First Passenger Train Down passes Freight Train No. 1 Down at Manchester.

4. The First Up Passenger Train meets Freight Trains Nos. 2 and 3 Down at Manchester.

5. THE REGULAR PASSENGER TRAINS ARE ENTITLED TO THE ROAD, AND ALL OTHER TRAINS WILL KEEP CLEAR OF THEM BY AT LEAST TEN MINUTES, no Train must leave a station before the time specified.

6. Station Agents will stop a train following another within TEN minutes, by giving a signal with a blue flag.

7. A red Flag by day, or red lantern by night, displayed on the front of an engine is notice of a train following, and is to be waited for BY ALL TRAINS.

8. A white Flag by day, or white light by night, displayed on the front of an engine, is notice of an engine or train following, which will keep clear of all REGULAR TRAINS.

9. A Red Flag by day and a lantern by night, must be placed on the rear car of all Freight Trains.

10. A Lantern must be placed on the rear car of all Passenger Trains by night.

11. A Brake Car, with a Brakeman, must always be on the rear of the Freight Trains when in motion.

12. If a Passenger Train should leave Concord, Nashua, Manchester or Lawrence late, the engineer will not make up more than FIVE MINUTES of the time, and that must be done equally on the whole length of the Road.

13. In case of accident or any delay upon the road, a signal must be set instantly each way, to stop anything that may be coming.

14. No Engineer will run ahead of the time given on this time table without written instructions from the Superintendent.

15. All Passenger Trains and engines without trains, will make a full STOP before passing through the Goff's Falls Bridge. All freight trains are limited to a speed through said bridge, not exceeding six miles per hour and if possible to pass without working steam.

16. All Freight Trains, and engines without trains, must approach the stations of Concord, Hooksett, Manchester, Lawrence and Nashua at a rate of speed, that if a previous train should be stopping there, they can hold their train under full control so as to prevent accident or collision.

17. No train will pass through Hooksett Bridge at a greater rate of speed than six miles an hour.

18. No Freight Train or engine without train, will pass through the Goff's Fall Bridge within ten minutes of the time a passenger train is due from the opposite direction.

No extra passenger train or engine without train, will pass over the road at greater rate of speed than the regular passenger train time, and no cattle or extra freight train, will pass over the road at greater rate of speed than the regular time of freight trains.

These rules are signed by J. A. Gilmore, Supt. We selected these rules of the Concord, Manchester & Lawrence R. R. as it was the road over which Abraham Lincoln traveled when he visited New Hampshire in 1860 and also because J. A. Gilmore, Supt. was later the Civil War Governor of New Hampshire in 1863 and 1864. For Lincoln's travels in New Hampshire, see "Abraham Lincoln in New Hampshire" by Judge Elwin L. Page.

President Lincoln was much interested in the work of the United States Military Railroads during the Civil War, and called the trestle, over Potomac Creek, built by General Haupt, Supt. of Military Railroads, the "Bean-pole and Corn-stalk" bridge.

General Herman Haupt was the first General Superintendent of the U. S. M. R. R. He was a graduate of West Point and in 1846 became connected with the Pennsylvania Railroad and after the war worked on the construction of the Hoosac Tunnel. In 1863 General Haupt was succeeded by General D. C. McCallum as Superintendent of military railroads, and their efficient management later received high praise from General Grant.

Rules governing transportation on the U. S. M. R. R. were:—1st Subsistence for soldiers, 2nd Forage, 3rd ammunition, 4th Hospital stores, 5th Infantry regiments that had seen service and staff horses.

At first trains on the military railroads were moved on telegraph orders, but the lines were so taxed with military orders and messages, that were given preference over train orders, that the movement of trains reverted to time card rules. Colonel W. W. Wright was in charge of Sherman's railroads during the Atlanta campaign.

In an article on Federal Military Railroads, in the Photographic History of the Civil War, by Captain O. E. Hunt, U. S. A., its distinguished author says;—"At one time, just prior to the close of the war, there were 1769 miles of military railroads under the direction of General McCallum, General Manager of the Military Railroads of the United States. These roads required about 365 engines and 4200 cars. In April 1865 over 23,500 men were employed. The results were recognized throughout the world as remarkable triumphs of military and engineering skill, highly creditable to officers and men."

The rules of the Old Colony Railroad for 1866 contain the first reference to the telegraph, two rules out of a total of thirty seven, being devoted to that subject. One of them reads;—"Telegraph Operators are required to be at their posts to answer all calls during the day, and until all passenger trains that may be due arrive, or leave some competent person in their place". The second was as follows;—"In all cases where there is a necessity for changing the meeting place of two trains by telegraph, it must be so arranged as to be perfectly safe. All messages received for that purpose, at any station, will be repeated back to the station from which it was received. The Conductor will in all cases furnish the Engineer with a copy."

In closing this decade we will quote the Rules of the New York and New Haven R. R. of November 22, 1869 for the running of its trains over the Harlem Railroad from Williams Bridge to 27th Street, New York, the first Grand Central Station not being open for two years after;—

1. Employes of the New York & New Haven Railroad Company will observe the Rules and Regulations of the Harlem Road when upon that Road.

2. Enginemen will always report to the Superintendent of the Harlem Railroad any accident upon the Harlem Road and of any cattle injured or killed.

3. No Train is to make up time between 42nd St. and Williams Bridge.

4. The whistle will be sounded before passing Harlem, Mott Haven, Melrose, Upper and Lower Morrisania, Fordham and Williams Bridge.

5. At Williams Bridge, Fordham, Morrisania, Mott Haven and Harlem Stations, GREEN Lamps and Flags are used as signals to indicate that a Train has just passed in the same direction and Enginemen will proceed with great caution.

6. Trains from New York will approach Melrose Station with care, and look out for the red signal. Freight Trains may be crossing at Morrisania Junction.

7. All Trains from New Haven will approach Fordham with EXCEEDING CARE.

8. The speed of trains through Harlem, FIVE MILES PER HOUR.

9. It is the duty of each Conductor going toward New York to be upon the platform of one of the cars at Williams Bridge, and to look and see what signals, if any, are put out by the Harlem Railroad Company's Agents or Switchmen, and obey the same. It is their further duty to require each Brakeman upon their train to look out at Williams Bridge, Fordham, Mott Haven, Harlem and 42nd Street for signals, and this they must do in both directions over the Harlem Road.

10. Conductors of Trains going to New York will see that the bell cord is connected with the Engine until the Train passes 50th Street, and that the tail light is not removed until the Train shall have arrived at 27th Street.

11. Every Engine and Train will be brought to a full stop in sight of the Harlem River Draw, before the same is passed over.

The above rules are interesting, as showing the tremendous growth of New York City since 1869. Engines no longer whistle at Harlem, Mott Haven or Fordham, except in case of emergency, and no cattle are liable to stray on the Harlem tracks.

1870 - 1880

In this decade there were two important changes. From the beginning of the railroad, the Employees time tables of practically all roads, were printed on single sheet, with time on front and rules on back. Some of the very small roads, which had but few trains, printed the rules under the time, on same side of the sheet. In later years, on the smaller roads, there was issued a small book 4 x 5 giving both time and rules.

By 1870 many roads has grown so large, and trains so frequent, that something had to be done, as the single sheet time table had reached the point where it was nearly a yard long in some cases. Another disadvantage was that the old single sheet got very much soiled, especially on the engine.

On April 1, 1872, the Old Colony issued its first book form Employees time table, No. 1 New Series, with heavy paper covers and very similar to the employees time tables of the present day. It was a great improvement. The Fitchburg and the Boston and Maine were roads that early adopted this form. Rules were printed at the end and were classified.

The second change in this decade was the coming of the Rule Book, entirely separate from the time table. One of the best examples of the early rule book is that of the Providence & Worcester Railroad which was "Prepared by the Superintendent, and approved by the President and Board of Directors of the Providence & Worcester Railroad, December 11, 1878. To take effect January 1, 1879".

This book contains some unusual features for that day. It consisted of ninety nine pages with three hundred and forty four rules and at the back of the book were six "Rules for Railroad Men in Cases of Accidents to Persons". In short the book approximated the rule book of

the present day, starting with "General Regulations" in which, of course, the well known "Rule G" was included. It was then Rule 20 and reads;—"The use of INTOXICATING DRINKS on the road, or about the premises of the Company, is strictly forbidden. Any employee appearing on duty in a state of intoxication must be taken off duty at once, by his immediate superior, and forthwith dismissed. Those who do not use intoxicating drinks will receive the preference in promotion and employment".

Rule 31 states that "A Blue Flag by day, or a Blue Light by night, will be used by Car Repairers to protect them when repairing cars".

Other rules of historical significance were;—

33. An Explosive Cap or Torpedo, clamped to the rail, is an EXTRA DANGER SIGNAL, to be used in addition to the Regular Signals at night or in foggy weather, in cases of emergency, when other signals cannot be distinctly seen or relied upon.

44. Posts with letters "R" upon them show where the bell should begin to ring and the whistle sounded for grade crossings or stations.

49. In cases where the Signal is at all earnest, the Train must be stopped so that the person giving it may be conversed with, and that facts ascertained, even if the person giving it is not provided with the proper Danger Signal.

The present Rule 99 read as follows;—

84. In case of accident to a Train, or Track obstructed, a Flagman shall go back instantly with Danger Signals, to stop any Train or Engine which may be following. At a point 900 yards from the rear of the Train, or obstruction, he shall place one explosive cap on the rail. He shall then proceed 900 yards further to the rear, making 1800 yards in all from the obstruction, and place two explosive caps on the rail 5 yards apart; he may then return to a point 1200 yards from the rear of the Train, where he must remain until called in by the Whistle of the Engine; but if Signal of recall is given within twenty minutes of the time of a Passenger Train, he must remain at his post until it arrives. When recalled, the Flagman will remove the explosive cap nearest the Train, or obstruction, but the two explosive caps must be left on the rail as a Caution Signal to any following Train. If the accident occurs on a single track, or both tracks of the Main Line are blocked, the Fireman shall go forward to protect the head of the Train in the manner prescribed for the Brakeman to protect the rear. The Conductor, as well as Engineman, is required to know that the Fireman performs his duty, if he is unable to go then the Head Brakeman shall be sent in his place.

And here is a Rule concerning the old link-and-pin that is worth reproducing;—

174. When cars are left at a Station, there must be left TWO PINS AND ONE LINK WITH EACH CAR. Links and Pins must not be taken from Cars left standing on Side Tracks.

Rules For Running Trains By Telegraph

330. All special telegraph orders for the movement of Trains MUST BE MADE IN WRITING.

331. Not more than ONE PERSON shall be permitted, at the same time, to give special orders for the movement of Trains.

332. Special orders in regard to the movement of Trains must be addressed to the Conductor and Engineman in charge of the same.

333. Should the line, for any cause, fail to work before the Operator has received "O K" he will not deliver the order.

334. All orders and messages involving the movement of Trains must be written in full; and no figures or abbreviations shall be used.

335. When a train has orders to run regardless of a specified Train, it does not give the Train under such orders any rights over any other Train than the one specified in such order.

336. When a Train has orders to run to meet a specified Train, the name of the engine, and the name of the person in charge of the opposing Train, will be given in the order, to designate it; and the person receiving such order must ascertain by personal inquiry that the opposing Train met is the one named in the order, leaving no room for doubt as to identity.

337. All special orders for moving Trains are only for the Train to which, and persons to whom, they are addressed, and no other Train or person shall use such orders as authority to move their Trains. THEY ARE TO BE USED AGAINST SUCH TRAINS ONLY AS ARE EXPRESSLY NAMED THEREIN, and an order to run on the time of any particular Train must not be taken to run on the time of any other Train. All other Trains must be run against strictly as per time table and Rules.

338. In the case of single Track, telegraphic orders directing Trains to meet or pass at a given point, must be communicated to and acknowledged by the Station Agent at such point, or the Operator in his absence, as well as to and by those in charge of the Trains; and it is his duty, as well as theirs to see that such order is carried out.

339. In case of accident, or unusual detention to any Train, the Conductor of such Train will give the Operator at the nearest Station a written account of the particulars of such accident or detention, which the Operator will send to the Superintendent the first opportunity.

340. Any Operator or employee not understanding these rules will apply to the Superintendent for information regarding them.

341. All Telegraph Operators will be expected to make themselves thoroughly acquainted with the Rules and Regulations herein prescribed for their government. They must constantly bear in mind that any neglect to strictly observe them may result in damage to person or property, or even loss of life.

342. Nothing in these Rules shall conflict with the established Rules and Regulations of the Western Union Telegraph Company.

We have quoted extensively from the Providence and Worcester rule book, because it was not only one of the first of its kind, represented

a very definite advancement in rules, but it was also the same size and very nearly the same form as the rule book of today. As a matter of fact it was the exact size of the Boston & Maine book of the present time. Its author, Supt. W. E. Chamberlain, a very able operating officer, was in later years General Manager of the New York, New Haven & Hartford.

In the 1870's the Boston & Albany had the following rule for "Section-Masters"—"When necessary labor is done on Sundays, do not let it disturb congregations. Rather than that suspend work during the hours of public worship".

The Boston & Albany issued its first rule book in May 1872, and its first book time table for Employees in June 1872. This rule book contained 46 pages and was somewhat larger than the present style. The book is of historic interest, as the Back Bay was being filled in at that time and the rules for the gravel trains handling this work are worth reproducing;—

"Of Gay's City and Munson's Back Bay Gravel Trains. They will run on the third track only: the former between Grand Junction in Brookline and Village Place in Boston, and the latter between Brighton and the Oil House, east of Parker Street crossing, in Boston. They must conform to the following:

Rules

The Back Bay Gravel Trains have the right of way over the 3rd, or gravel track, only between Brighton and the Oil House, east of Parker Street crossing in Boston, and the City Gravel trains have the right of way over the same, between Gay's Gravel Pit, near Grand Junction, in Brookline, and Village Place in Boston, at the several times mentioned in the Table referred to above, and at no other, except when certain information has been received of the non-occupancy of the same from the party who has the right of its use at the time. A spirit of comity is expected, so that in case of unusual delay from any cause the party delayed will give information in writing to the other of his whereabouts, and of the length of time he waives his right to the track used in common.

This Boston & Albany rule book contained also about the earliest rules for the use of the Westinghouse Air-brake.

In the 1870's the Maine Central issued a twelve page booklet of "Rules and Regulations to be observed by all Persons Employed by and working the Telegraph Lines on the Maine Central Railroad," which contained the following examples for train orders:

Augusta Feb. 21 To Conductor and Engineer Train No. 3
Brunswick

You will cross Number two (2) at Yarmouth. "18"
O.K. L. L. L.
By W.

Brunswick Feb. 21

To L. L. L. Augusta, Me.
"9" cross Number two (2) at Yarmouth.

Richards, Conductor. No. 3 train.
Crane Engineer. No. 3 train.

The figure "18" in above order denoted: "answer how you understand this order, and wait my reply".

The figure "9" denoted "we understand we are to".

There were a total of 77 rules in this book, which is one of the few issued for the exclusive use of Telegraph Operators, as their rules were included in the regular rule book in nearly all cases.

By the late 1870's the train order by telegraph, originated by Charles Minot in 1851, had become almost universal on American railroads.

1880 - 1890

We now come to the most important decade in the history of railroad rules. In fact there were more drastic changes in rules, during this period, than at any other time in railroad history.

In 1881 the State of Massachusetts passed a law requiring examination of railroad employees for color-blindness, this examination to be conducted by an officer of the company and certificate issued to employee.

The next move was the Uniform Train Signals. From the beginning of the railroad, hand, lantern, whistle and bell-cord signals differed on almost every railroad in the country, the same as the rules, and differences were so great that a certain motion of hand or lantern on one road might mean the exact opposite on another. So serious had this become that on September 18, 1884 the System of Uniform Train Signals was adopted by the Southern Time Convention at its meeting in New York. James McCrea was the Chairman of the Committee on Uniform Train Signals. The Southern Time Convention was consolidated with the General Time Convention in 1886.

The greatest change in rules since the railroad began came with the Standard Code. The Committee on Uniform Train Rules and Telegraphic Orders was appointed at the meeting of the General Time Convention, held at the Grand Hotel, Cincinnati, Ohio, on April 14, 1886. The Committee comprised:

K. H. Wade, Gen. Supt. W. St. L. & P. Ry.
E. B. Thomas, Gen. Manager, Richmond & Danville System.
H. B. Stone, Gen. Manager, C. B. & Q. R. R.
H. Walters, Gen. Manager, Atlantic Coast Line.
J. T. Harahan, Gen. Manager, Louisville & Nashville.
William Rogers, Gen. Supt. Central & South-Western R. R.'s of Georgia.
C. D. Gorham, Supt. Western Division, N. Y. C. & St. L. Ry.
R. Pitcairn, Gen. Agent and Supt. Pittsburgh Div. Pennsylvania R. R.

The Committee made its first report at a meeting of the General Time Convention, held at the Hotel Brunswick, New York City, on October 13th and 14th, 1886, which was approved, and to be finally acted upon at the meeting to be held in New York April 13, 1887. In its report the Committee said that "it is been impossible to fully complete the Rules for the Movement of Trains by Telegraphic Orders in time to present them at this convention".

The historic meeting of the General Time Convention, at which the Standard Code was adopted, was held at the Hotel Brunswick, New York City, on April 13th and 14th 1887.

Representatives of New England roads present were:—

C. A. Hammond, Supt. Boston, Revere Beach & Lynn R. R.
C. A. Coombs, Gen. Manager, Boston, Hoosac Tunnel & Western.
John Adams, Gen. Supt. Fitchburg Railroad.
H. A. Phillips, Supt. Fitchburg Railroad.
William H. Stevenson, Vice President, Housatonic Railroad.
George W. Beach, Supt. Naugatuck Railroad.
E. G. Allen, Supt. Eastern Div. New York & New England R. R.
L. W. Palmer, Supt. Providence Div. New York & New England R.R.

Pullman's Palace Car Company was represented by Robert Barry, Supt. Central Division, and the Wagner Palace Car Company by N. M. Wheeler, Asst. Gen. Supt.

There were also present men whose names will live long in railroad history, among them: Charles E. Pugh, General Manager, Pennsylvania Railroad, James McCrea, General Manager, Pennsylvania Company and W. C. Brown, Supt. C. B. & Q. R. R.

After prolonged discussion, for the results were far reaching, Mr. E. T. D. Myers, Gen. Supt. of the Richmond, Fredericksburg & Potomac R. R. offered the following resolution: "Resolved, That the Code of Train Rules as recommended by the Committee and amended by the Convention, be finally adopted to take effect at the earliest practicable date."

The following is the list of the first railroads to adopt the Standard Code;—

Atchison, Topeka & Santa Fe.
Atlantic Coast Line—Richmond Division.
Atlantic Coast Line—Charleston Division.
Baltimore & Potomac.
Buffalo, Rochester & Pittsburgh.
Camden & Atlantic.
Central of Georgia.
Charleston & Savannah.
Chicago & Atlantic.
Chicago, Burlington & Quincy.
Chicago, Rock Island & Pacific.
Chicago, St. Louis & Pittsburgh.
Cincinnati & Muskingum Valley.
Cleveland, Columbus, Cincinnati & Indianapolis.
East Tennessee, Virginia & Georgia.
Georgia.

Grand Trunk.
Houston & Texas Central.
Indianapolis & St. Louis.
Jacksonville, Tampa & Key West.
Louisville & Nashville.
Mobile & Ohio.
New York Central & Hudson River.
New York, Chicago & St. Louis.
New York, Lake Erie and Western.
New York, Ontario & Western.
Norfolk & Western.
Norfolk Southern.
Northern Central.
Pennsylvania Company.
Pennsylvania Railroad.
Philadelphia, Wilmington & Baltimore.
Pittsburgh, Cincinnati & St. Louis.
Pullman's Palace Car Company.
Richmond & Danville System.
Richmond, Fredericksburg & Potomac.
Rome, Watertown & Ogdensburgh.
St. Louis, Des Moines & Northern.
Savannah, Florida & Western.
Seaboard & Roanoke.
Shenandoah Valley.
South Carolina.
Southern Pacific Company—Atlantic System.
South Florida.
Terre Haute & Indianapolis.
Toledo, Peoria & Western.
Wabash.
Wabash Western.
West Jersey.
West Shore.

There were five roads that voted against the adoption of the Standard Code. There is no need of naming them, as they have all long since adopted it, and while their representatives at the Convention certainly guessed wrong, it must be remembered that such a thing as the Standard Code was entirely new, had never been tried out and no one could be blamed for being cautious at the particular time.

Also on motion of Mr. Myers it was Resolved;—"That the Code of Telegraph Rules presented by the Committee be provisionally approved, subject to final adoption as a whole at the next meeting of the Convention, any Company being at liberty to at once adopt them."

The Standard Code as adopted in 1887 does not vary, in essential details at least, from that of the present day, there naturally being some changes made in the course of fifty years. The General Rules, Standard Time and Watchmakers Certificate etc. are practically the same.

What is now the famous Rule 4 was then rule 20 and read;—"Each Time-table, from the moment it takes effect, supersedes the preceding Time-table, and all special instructions relating thereto; and trains shall be run as directed thereby, subject to the rules. All regular trains on the road running according to the preceding Time-table shall, UN-

LESS OTHERWISE DIRECTED, assume the times and rights of trains of corresponding numbers on the new Time-table."

The Committee recommended that odd numbers shall be given to west or southbound trains and even numbers to east or northbound trains.

Rule 99 was under the same number as today, it read;—"When a train is stopped by an accident or obstruction, the flagman must immediately go back with danger signals to stop any train moving in the same direction. At a point—— from the rear of his train he must place ONE torpedo on the rail; he must then continue to go back at least—— from the rear of his train and place TWO torpedos on the rail ten yards apart (one rail length) when he may return to a point——from the rear of his train, and he must remain there until recalled by the whistle of his engine; but if a passenger train is due within TEN minutes he must remain until it arrives. When he comes in he will remove the torpedo nearest to the train, but the TWO torpedos must be left on the rail as a caution signal to any following train".

The Committee finding that the distances and times necessary for flagmen to go back differ so much on account of grades, amount of traffic and other local circumstances, have left blanks for each Company to determine what distances and times necessary, either for its road as a whole or for each division.

The second paragraph of Rule 99 read; "If the accident or obstruction occurs upon single track, and it becomes necessary to protect the front of the train, or if any other track is obstructed, the fireman must go forward and use the same precautions. If the fireman is unable to leave the engine, the front brakeman must be sent in his place".

Another rule that was significant, was the following; "On single track all trains in one direction specified in time-table, have the absolute right of track over trains of the same class running in the opposite direction".

It was represented to the Committee that some of the roads represented in the Convention will be unable, on account of limited telegraph facilities and other local causes, to carry out this rule in its literal meaning and full scope. It was suggested by the Committee that such roads may issue regulations to arrange this matter in some other way. This explains the retention of the Positive Meet on the Old Colony, after the adoption of the Standard Code. The Old Colony adopted the Standard Code in June 1889.

The Standard Code, as first adopted contained 121 Rules. This did not include the rules for the movement by telegraphic orders.

The Standard Code of Rules for the Movement of Trains by Telegraphic Orders was adopted by the General Time Convention at its meeting, held at the Hotel Brunswick, New York, on October 12, 1887. Mr. E. T. D. Myers offered this resolution;—"Resolved—That the thanks of the General Time Convention are due to the Committee which has, with such great ability, developed from a mass of discordant rules, practices and preconceptions, the document which has just been adopted

by this body, and which will hereafter doubtless govern the movement of railroad trains over a vast network of railroads.

At this meeting it was voted to change the whistle signal to four long to call in flagman from south or west and four long and one short to call in flag from north or east.

In the original code for the movement by telegraphic orders the 19 order was to be on green paper and the 31 order to be printed on white paper, the same as at present. The first Standard Code contained no definitions. By 1889 it had been adopted by sixty four roads.

The Massachusetts Railroad Commissioners in their Annual Report for 1889 had this to say on Operating Rules;—"Lack of uniformity on different roads in rules governing the train service is a definite source of danger, which has long been recognized by railroad men * * * No person can watch the lack of uniformity in methods of giving hand signals by day or lantern signals by night, without wondering why more frequent disaster has not resulted.

"Uniformity in the numbers of rules, as well as in phraseology, is of great value, both as a means for facilitating references and of diminishing the chances of misunderstanding. If there is uniformity in rules employees will be benefitted, because experience on one road will then be a qualification for, rather than a bar to, equally responsible employment on another".

" * * * For the sake of promoting the safety of travel on all roads, and for the benefit of others as well as for their own benefit, we urge those roads which have not yet adopted the Time Convention's code, as the basis of their rules to do so without further unnecessary delay".

The period of the 1880's was the "high-water mark" of the ball signals, as interlocking came more and more into use the picturesque ball signals went the way of the wood-burner and today they are almost a relic. But there is no denying they were a great signal in their day and in use at every important point. As illustrating their almost universal use, the following places on the Old Colony Railroad had ball signals as listed in the rules of 1887;—South Braintree, Mayflower Park, Raynham, Whittenton Junction, Weir Junction, Somerset Junction, Fall River (Bowenville) and Fall River at Stone Arch and Wharf, Brockton, West Bridgewater, Bridgewater Iron Works, Middleboro, Middleboro & Taunton Junction, Myricks, New Bedford, Weld St. and Wall St. East Weymouth, Kingston, Shawmut & Milton Junction, Elmwood, Tremont, Buzzard's Bay, Yarmouth, and on the Northern Division Pratts Junction, Clinton, West Berlin, Framingham, South Framingham, Mansfield, Middlesex Junction, Lowell, North Acton Junction, South Sudbury.

Interlocking was installed at Braintree July 3, 1887 and at Mansfield April 22, 1888.

A sample rule governing ball signals is taken from the Old Colony rules for 1887. "At Fall River—A red ball or red light displayed on the mast on the WHARF STATION admits the outward steamboat

passenger train to the Wharf, provided the proper signals are also displayed on the mast at the Arch; and that trains must not enter upon the Wharf track unless the above signal is seen to be displayed."

The first mention of train-numbers in the headlight on the Old Colony Railroad was in its first rule book, issued to take effect June 25th 1888. Up to this time rules had been printed in the back of the time table. Incidentally this was the date of the first trip of the "Gilt Edge" express over the Shore Line.

Rule 79a—All trains will display their numbers on the front of their headlight. The numbers of Regular Trains are those given in the time table. The numbers of an Extra Train will be that of its engine (forward engine, if more than one engine) preceded by an "Ex" and will be similarly displayed upon front of headlight, second or third sections of Regular Trains will display 2nd or 3rd preceding the number.

The Old Colony and the Boston & Maine were the two principal roads in New England to use train-numbers in the headlight, but the custom was not universal by any means. It had much to commend itself however, especially as a convenience to tower men, station agents, section men and other employees along the road. It is not considered a necessity today, from the modern operating standpoint, and has not been in use for some years.

1890 - 1900

In 1890 the Standard Code had been adopted by ninety three roads and on April 8, 1891 the General Time Convention was changed to the American Railway Association.

In the Old Colony Book of Rules of June 15, 1891 the rule regarding train-numbers in the headlight was amplified to read;—"All trains will display their numbers on the front of their headlight. The numbers of Regular Trains are those given in the Time-table. The number of an Extra Train will be that of its engine (forward engine, if more than one engine) preceded by "Ex" and will be similarly displayed upon front of headlight. Second or third sections of Regular Trains will display "2nd" or "3rd" preceding the number, (the numbers of Regular Trains must not be placed upon engines' headlights, at the place of starting, UNTIL THE ENGINES ARE COUPLED TO THEIR TRAINS, and the numbers must be removed immediately after the arrival of the trains at their destination and BEFORE THE ENGINES ARE MOVED FROM THEIR TRAINS).

Rules for Conductors—604a. He will PERSONALLY see that the correct train numbers are bourne upon the headlights of the engines of his trains.

Enginemen and Firemen—628a Enginemen will PERSONALLY place the train numbers upon the headlights of their engines.

During the 1890's, and in fact even at an earlier period, it was the fashion, on some of the New England roads at least, to run what was known as "Wild Trains". A good illustration of this is the following, taken from Boston & Maine Time Table, W. N. & P. Division, of October 4, 1891;—

1. Regular Trains are those specified in the Time Table. Special Trains are those running on printed notice. All other Trains or Engines are Wild Trains.

35. Wild Order—An order giving a Train the Right to Run Wild.

"Run Wild———— to————

Under this order the train named will run to the station designated as a Wild Train, keeping ten (10) minutes clear of all Regular or Special Trains.

The rules of the New York & New England Railroad, in effect May 22, 1892, are of interest, as they define the duties of Chief Engineer, General Master Mechanic and Superintendent. It is unusual that officers of such high rank are assigned a place in the rules. Under heading "The Superintendents of Divisions" the book says;

"Each Division is complete in its separate organization and each is in charge of a Superintendent, who upon his Division exercises all the powers that may be necessary for the care of the property, and the efficient management of his Division, and of the property of the Company, and of other companies when upon the railroad of this Company, when within the limits of the Division, or when transferred to the Division, and all employees on duty with the same are under the direct charge or control of the Superintendent of that Division, unless otherwise specially ordered."

"Superintendents will report to, and receive instructions from the General Superintendent, with whom they must be in constant communication."

The balance of the paragraphs are devoted to minor duties of the Superintendent. The paragraphs relating to the General Master Mechanic, say among other items that; "The General Master Mechanic will receive instructions from, and report to, the General Superintendent. He will have supervision over the machine and car shops of the Company, and over all construction and repair work done on locomotives, cars, tools and machinery. In the performance of his duties he will be assisted by a Master Mechanic at each machine shop, and a Foreman of Car Repairs at each car shop."

These rules were prepared by I. D. Barton, General Superintendent of the New York & New England Railroad, who began his railroad career as station agent on the Harlem at Mott Haven in 1852, when Mott Haven was a small country village.

On March 1, 1893 came one of the big changes in New England railroad history, when the famed Old Colony Railroad was leased to the New York, New Haven and Hartford. The Old Colony, originally opened to Plymouth in 1845 had gradually absorbed all the railroad lines in southeastern Massachusetts and it was as large, or a bit larger than the New Haven itself at that time. It controlled the Fall River Line and had a most valuable asset, in that it was very popular with the traveling public.

The equipment of the two roads at the time of the lease may be of interest;—

OLD COLONY		NEW HAVEN	
Total length of all miles operated 588.75		Total length of all miles operated 525.89	
Locomotives	238	Locomotives	239
Passenger Cars	497	Passenger Cars	441
Bag. Mail & Ex. cars	57	Combination	46
Freight		Drawing-Room	34
Box	1587	Sleeping	10
Platform	746	Observation	1
Stock	15	Pay	2
Coal	1713	Bagg. Mail & Exp.	118
Caboose	53	Fish	7
Other Cars	249	*Freight*	
		Box	1913
		Flat	779
		Stock	4
		Coal	1304
		Milk	17
		Dump	405
		Caboose	83
		Derrick	13
		Other Cars	34

The Old Colony was operated in four Divisions; Central, Cape Cod, Providence and Northern.

Mr. J. H. French was Superintendent of the Central Division, Mr. C. H. Nye of the Cape Cod Division and Mr. I. N. Marshall of the Northern and Providence Divisions. Mr. J. R. Kendrick was the General Manager.

In the fall of 1893, after the New Haven had assumed control, the divisions were reorganized, the Central Division becoming the Plymouth Division and the Northern was changed to include all points north of Mansfield, with the new Taunton Division points south thereof. The Cape Cod Division remained the same until 1901 when it was consolidated with the Plymouth Division.

On account of the size of the recently acquired Old Colony Railroad the New Haven decided that all lines East of New London would be known as the Old Colony System and the lines West of New London as the New Haven System.

At this time the Rules of the Old Colony Railroad of June 15, 1891 were still in effect on the Old Colony lines. A Rules Committee was appointed to assimilate the rules of the two companies and on June 17, 1894 the first rules of the New Haven were applied on the Old Colony, both the positive meet and the train numbers in the headlight being retained, both rules being the same as in the Old Colony book. Train numbers in the headlight lasted until the closing of the historic old Kneeland St. station on the night of December 31st 1898 when they were abandoned.

The Rules of the Old Colony System were printed in back of time table until 1899 when the first rule book was issued separate from the time table.

In 1895 the New York & New England Railroad was reorganized as the New England Railroad Company and the following year its station at the foot of Summer St. Boston, was selected as site of the new South Station. The last train out of the old New England depot was the 11.17 P. M. for Franklin and way stations on the night of August 22, 1896. The following morning (Sunday) the New England trains entered the Old Colony depot and used that station until the opening of the South Station on January 1, 1899.

An interesting phase of railroad operation in the 1890's was the running of the trains of the New England road into the Old Colony depot during the construction of the South Station. By a switch connection at South Bay Junction New England trains were routed on to the Old Colony tracks at South Boston. The trains being run on Supplement 4 to Time Table No. 24 of the Plymouth Division, taking effect August 23, 1896.—"New England trains will be governed by the General Rules of the New York, New Haven & Hartford Railroad and the Special Rules of the Plymouth Division, while between Boston and South Bay Junction. All Southbound trains passing South Boston will be governed by semaphore Signals at the north end of the coal shed; the top arm being for New England trains and the lower arm for New York, New Haven & Hartford trains. Southbound New England trains will sound two short and one long whistle (thus— — ——) in approaching South Boston Station. Northbound New England trains will run at slow speed, after passing South Bay Junction, and will be governed by hand signals from the junction switchman in approaching South Boston Station. Green signals displayed by the Switchman, denote the switches right for Northbound New England trains. In the absence of Green Signals, Northbound New England trains will come to a full stop before passing the Red post at the car shops".

"Train numbers are not displayed upon the headlights of New England trains, but all New England engines have a White Maltese Cross on front and rear." The advent of the New England trains into the Old Colony depot brought the total number of trains using the station to more than two hundred and fifty a day.

Another great change in New England Railroad history came on July 1, 1898, when the New England Railroad became a part of the New Haven System.

We now come to a radical change in rules and signals, which is important historically, as it is the story of how the New Haven adopted Green for safety instead of White.

On the evening of September 6, 1898 train 319, a local express from Boston to Newport, engine 752, baggage car, smoker and two coaches was due at Mansfield at 7.25 P. M. and to pass Whittenton Junction at 7.39 P. M.

Train 1301 local from Boston to Taunton via South Braintree, engine 754, combination car and one coach, was due to pass Whittenton Junction at 7.43 P. M., or about four minutes after train 319.

At Whittenton Junction was a complete interlocking plant, with home and distant signals on both lines. A highway crossed the tracks just beyond or south of the point they came together, passing close by the interlocking tower, and was protected by gates which were operated by the man in the tower.

Train 319 from Mansfield was four minutes late and was therefore precisely on the time of 1301. As the engineer of 319 approached the distant signal he noted the blade set at caution and slowed down but at the same time he saw in the direction of the signal tower a white light, which he supposed was the home signal at safety, and came along. As he neared the home signal he saw the light was out and the blade set at danger, but just beyond it a white light appeared to be moving up and down, which he took to be a hand signal directing him to proceed. He slowed down at the tower and shouted to the tower man asking him if it was all right to go ahead to Taunton, when at that instant train 1301 came along and there was a collision.

In brief this was caused by the white light of a highway crossing gate being taken for a safety signal. The Massachusetts Railroad Commissioners in their investigation of this collision stated that in some respects it was "the most peculiar that has ever occurred in this State." The result was that the New Haven adopted Green for safety and this has been followed until it is now universal.

1900 - 1910

The opening years of the century found a new name among the list of railroad officials—the Rules Examiner.

There had been examinations on the Book of Rules before this, more or less perfunctory, being conducted by an Assistant Superintendent, Trainmaster, Chief Dispatcher, or some other official drafted for the purpose in addition to his other duties. This was a start in the right direction, but it was not until the Rules Examiner that the splendid system of today of rules examination came into being. There is probably no time in the history of the railroad that men are as well posted on the rules as they are today and the credit for this is due in no small measure to the ability of the Rules Examiner.

The Rules Examiner has nothing to do with discipline, and he is thus able to maintain an easy and friendly attitude with all with whom he comes in contact. Many good men are nervous when they are up for examination on the rules especially if the examiner happens to be a stranger to them, but the examiner will soon put them at ease.

The public knows nothing of Rules Examiners and even on the railroad they are scarcely known outside of the Operating Department. The writer has known many rules examiners and many of them are his personal friends. They have never received in print the praise and credit which are their just due.

Everyone of them is a grand good fellow and a railroad man from the ground up. When they give a decision on the rules, without an if, but, and, unless or except, it is ability of a high order, and spelled with

a capital A at that. When an engineer or conductor comes out of the examiner's office with the remark; "Bill sure does know his stuff", it is about the highest tribute that can be paid.

The rules examination system on railroads today is one hundred percent perfect in every way, shape and manner. Every man in the operating department is scheduled to come up for examination on the rules at stated intervals. For examination for promotion to conductor or engineer upwards of nine hundred questions have to be answered, and answered correctly, to attain the higher positions. Nothing gains confidence more than answering the first questions correctly and the Examiner will usually start on simple questions, such as the difference between right and class, or what is meant by current of traffic etc. and then lead up to the more complicated questions. The examinations for the minor positions are, of course, shorter than for conductors or engineers. Vision, color-perception and hearing (V. C. P. & H) are included in all rules examinations.

One of the most interesting, as well as historic, signal systems was the Lawrence Triangle on the old Western Division of the Boston & Maine Railroad. The rules governing these ball signals are well worth reproducing and are taken from the Boston & Maine Railroad, Western Division Time Table No. 19A of June 24, 1907, signed by William Merritt, Supt., a famous name in Boston & Maine history.

Signal at Southwest Corner of Triangle. 100—One ball or one red light allows Western Division trains on the Boston & Maine Railroad from the west to enter South Lawrence, or to pass from South Lawrence east or north, but stop all others.

Two balls or two red lights allow all trains on the Southern Division to pass in either direction, but stop all others.

Three balls or three red lights allow all trains from North Lawrence on the Boston & Maine Railroad, Western Division, to pass to the Western Division main tracks of the Boston & Maine Railroad, but stop all others.

Four balls or four red lights allow all trains on the Boston & Maine Railroad, Western Division, to come from the east into South Lawrence, but stop all others. Trains approaching South Lawrence from the east and finding signals not right for them must stop far enough east of Salem Street bridge to clear cross-over near that bridge leading from inward to outward track.

Signal Pole at Northeast Corner of Triangle. 101—One ball or one red light allows trains on the Boston & Maine Railroad, Western Division, main tracks, and trains on the Southern Division, to pass in either direction, but stops all others.

Two balls or two red lights allow trains to pass from the main tracks of the Boston & Maine Railroad, Western Division, across the Southern Division towards North Lawrence, but stop all others.

Three balls or three red lights allow trains from North Lawrence to cross the Southern Division to the main tracks of the Boston & Maine Railroad, Western Division, but stop all others. Trains on the Boston & Maine Railroad, Western Division, which have no occasion to pass

over the Southern Division crossing at either corner of the triangle, will not come to a stop, but will pass in to or out from South Lawrence whenever the proper signal is displayed for their approach or departure.

SIGNAL POLE AT NORTHWEST CORNER OF TRIANGLE. 102—One ball or one red light allows all trains to pass on the main tracks, in either direction, between North and South Lawrence.

Two balls or two red lights allow trains from the east to go towards North Lawrence, but stop all others, except trains from North Lawrence running towards South Lawrence.

Three balls or three red lights allow trains to go east over the "Y" from North Lawrence, but stop all others.

The Boston & Maine rules for train numbers in the headlight are given in this same time table:—All regular trains will display the number of the train in front of the headlight. Outward trains have odd numbers; inward trains have even numbers. Extra trains will display the letter "X" and number of engine in the headlight.

It is the duty of enginemen to place the numbers on the locomotive, but Conductors will personally see that the numbers are right before giving the motion to start.

Regular freight trains will also display the train number in the monitor of the caboose car, and extra freights will display the letter "X" in the monitor of the caboose.

Numbers must not be displayed in the headlight of the engine, except at Union Station, Boston, until the engine is coupled to the train and the train stands at the station ready to start; These Numbers must be removed, except at Union Station, Boston, immediately on arrival of the train at its destination."

Train numbers in the headlight were in use on the Boston & Maine Railroad until its new rule book taking effect February 1, 1931, when this time honored custom was abandoned.

1910 - 1920

From about 1910 and on the Safety First movement gathered strength with the organization of Safety Departments, in charge of an officer variously known as Supt. of Safety, Supervisor of Safety, etc. In the beginning it was up hill work for those in charge, but it has saved hundreds of railroad men from death and injury by observing Safety First Rules.

It is amazing, as we look back now, and recall the many unsafe practices, now forbidden, but then thought nothing of. Perhaps one of the most hazardous was making the front jump on the running board of an approaching switcher, now positively forbidden. The writer recalls a yard brakeman who could make a particularly graceful jump on either the front or rear of a moving switch engine, or car for that matter, and got away with it for many years. It was a beautiful sight to watch, but would have been far different if anything had happened.

Other dangerous practices of the old days were lining up draw-bars with the feet, kicking a sticking brake shoe on moving cars, sitting on

brake wheels etc., all of which were done every day and no one gave it a thought. Even further back, in the days of the link and pin, the chances taken in coupling cars would not be permitted for a moment in modern railroading.

It must be remembered that at first the safety movement had luke warm supporters, especially in freight train service, where in the days of "iron men and wooden cars" taking a chance with their lives was all in a day's work.

What probably helped as much as anything to put Safety First across was the division safety meeting, where any man was welcome to get up and talk and suggestions always in order. For those which were adopted the men making them got full credit. Naturally it followed that it would be impossible to adopt all of the many suggestions presented at safety meetings, some not practical, others impossible to adopt etc., but for those men whose suggestions were not followed it was, and is, explained to them, either personally or by letter, just why their suggestion was not adopted.

Of course this was all a great stimulus to the Safety Movement, furthermore it did not take long for the men themselves to realize what a wonderful thing safety first was, and about that time the various officers in charge of the safety departments did a very shrewd thing; they interested the wives and families of the men in safety, and when the women folks took up safety first the battle was won.

The results of the Safety First movement has been a vast decrease in the number of railroad men killed and injured and has helped reduce accidents and collisions to the point where they are all but unknown. To the safety officers on American Railroads this is a record to be proud of.

1920 - To Date

With the coming of the automobile there passed from the rule books an old familiar rule for Enginemen:—"They will use the utmost care to avoid frightening horses by permitting the unnecessary escape of steam from the safety valve, or by opening the cylinder cocks either when starting or passing road crossings".

The Electric Staff System Rules, and transmitting train-orders by telephone, are not within the province of this article. Whether the telephone will eventually supersede the telegraph is a question that cannot be answered at the present time, though it must be admitted that the telephone is being used more and more for train-orders.

It is a long way from the days of waiting at a station for an opposing train to come along and both the railroads and the public owe a debt to Charles Minot, who made possible the train-order by telegraph. Today we do even better, when a freight conductor can call the dispatcher on the telephone from some remote siding.

Of all rules in the present book there is probably none about which so many questions are asked as Rule 4. This rule reads as follows:—"Each timetable, from the moment it takes effect, supersedes the pre-

ceeding time-table, and its schedules take effect on any division, or subdivision, at the leaving time at their initial stations on such division, or subdivision. But when a schedule of the preceding time-table corresponds in number, class, day of leaving, direction, route, and initial and terminal stations with a schedule of the new time- table, a train authorized by the preceding time-table will retain its train orders and assume the schedule of the corresponding number of the new time table.

Schedules on each division, or subdivision, date from their initial stations on such division, or subdivision.

Not more than one schedule of the same number and day shall be in effect on any division, or subdivision."

Sounds simple and yet there is not an employees' magazine, having a Forum of Train Rules but what has some question on Rule 4 in practically every issue. It would be interesting to know how many times Mr. Collingwood and Mr. Matthews, two of the greatest rules experts in this country, have answered questions on Rule 4. If many of those who ask these questions would concentrate on the "six points" contained in that rule it would save quite a bit of correspondence.

Rule 4, as has been previously shown, was one of the original Standard Code rules in 1887. It was amended in 1895-1899-1902 and 1906, and was amended to read as at present on November 17, 1915.

The aim of this article is the history and development of rules only. Rules are the most important part of railroad operating, without them trains could not be run. Their importance is self-evident and a thorough knowledge of them is essential. Were the strict rules and rigid discipline of the railroads applied to drivers of automobiles, the long list of killed and injured, already a disgrace to American civilization, would diminish to the vanishing point.

When the motorist is compelled by law to assume, approximately at least, the responsibilities of the locomotive engineer. When the drunken driver, those that pass a red light, and the fool that comes tearing out of a side street onto the "main line" at fifty miles an hour, are forever barred from driving a car again, it will go a long way toward eliminating automobile accidents. Speed limits should be set covering the super-highways, state highways and dirt roads, as is done on the railroad in main line and branch line service. Fifty years from now the American people will be horrified as they read of the awful death toll of the first thirty years of the automobile. The railroad in its earliest and crudest years never even approached it.

There are two vital points to remember in connection with railroad rules:—First, no accident was ever caused by obeying the rules, and second, no man who lives up to the rules will ever get in trouble.

Early Locomotives of the Lackawanna Railroad And Subsidiary Lines

By F. Stewart Graham

The present Delaware, Lackawanna & Western Railroad is the consolidation of a number of small roads in Northern New Jersey, Northeastern Pennsylvania and Southern New York. The three largest lines in this merger, the Morris & Essex, the Delaware, Lackawanna & Western and the New York, Lackawanna & Western, form the main line, and incidentally the shortest route between New York and Buffalo.

The Morris & Essex was incorporated in New Jersey on January 29th, 1835. It is the eastern division of the system, over which the Lackawanna reaches the New York seaboard, and was leased to the D. L. & W. in 1868.

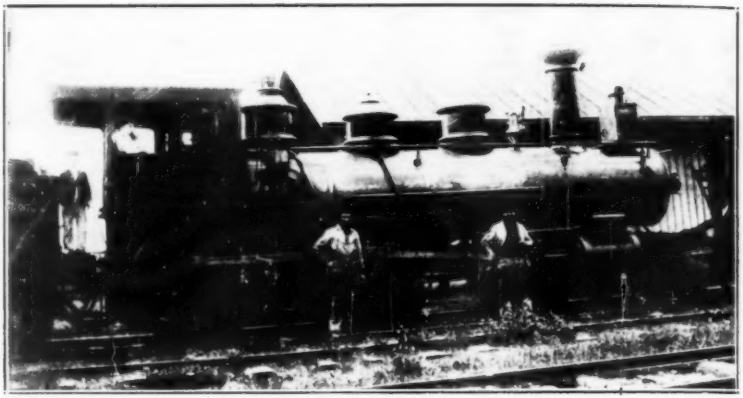
The Leggetts Gap Railway was chartered April 7th, 1832 to run from Cobb's Gap, Pa., west to the New York State Line, changing its name to Lackawanna & Western April 14th, 1851. On March 11th, 1853, this line merged with the Delaware & Cobb's Gap R. R., which had been chartered April 7th, 1849 to run between Scranton and Delaware Water Gap, to form the Delaware, Lackawanna & Western and the nucleus of the main line of the Lackawanna System.

The New York, Lackawanna & Western R. R., running from Binghamton to Buffalo, approximately 215 miles, was opened October 2nd, 1882, and leased to the D. L. & W., a few days after opening.

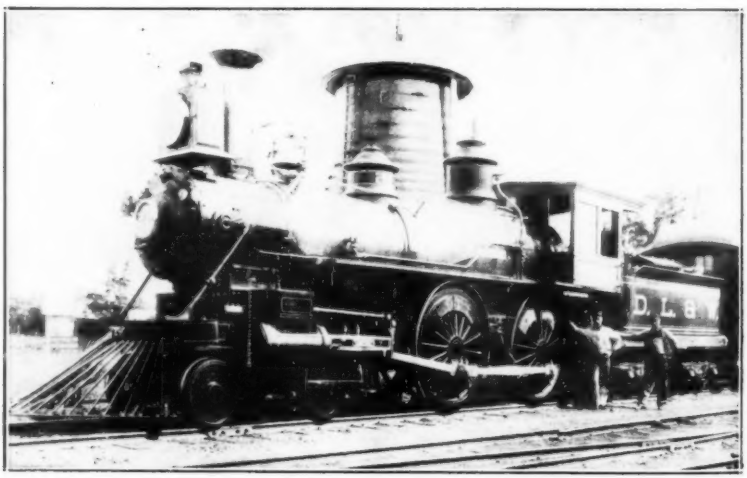
The other lines included in the merger, which was spread over a period of years, were for the most part branch lines, and were of less importance relatively than the three aforementioned. These smaller roads consisted of the following:

In New Jersey:	—Warren Railroad.
	Newark & Bloomfield.
	Passaic & Delaware.
	Sussex Railroad.
	Lackawanna R. R. of New Jersey.
In Pennsylvania:	—Bangor & Portland.
	Lackawanna & Bloomsburg.
	Lackawanna & Montrose.
	Hanover & Newport.
In New York:	—Greene Railroad.
	Syracuse, Binghamton & New York.
	Oswego & Syracuse. Includes Syracuse & Baldwinsville.
	Erie & Central New York.
	Utica, Chenango & Susquehanna Valley.
	Ithaca & Oswego. Later Cayuga & Susquehanna.

A study of the early motive power of the Lackawanna System reveals a condition existing on many other railroads of that period, namely, the consolidation of a number of small roads, bringing together locomotives of many varied types and styles, and representing the best efforts of the leading locomotive builders of the day. To the many who



D. L. & W. "I. H. Palmer." Erie & Central N. Y. #1.
T. B. Newkirk, fireman at left, next John Ray, engineer and N. O. Bundy, Gen'l. Mgr. E. & C. N. Y. at Courtland, N. Y.



D. L. & W. (Utica Div.) #22, later #464—Utica Shops, 1885.

admire the appearance as well as the performance of an engine, it may be said that the motive power department of the D. L. & W., while often very conservative in adopting improvements and increasing the size of its locomotives to meet the development of traffic, did produce engines pleasing to the eye, and whose lines were not marred by all manner of so-called improvements. In the older equipment neatness prevailed, and practices such as hanging air pumps on the backs of cabs, unsightly location of air resevoirs, and placing bells on top of sandboxes were consistently avoided. There are, of course, exceptions to any statement as broad as the foregoing, and the engine VULCAN was probably the most disreputable appearing engine on the road. Built by Cooke in 1880, and one of the original order of center cab consolidations, her symmetry was ruined by locating the cab on top of the firebox in an attempt to overcome the disadvantages of the center cab.

It is the writer's personal belief that few, if any, railroads have engines whose history is more difficult to trace. Locomotives were renamed and renumbered, transferred from one division to another and back again, ordered for one division and used on another. Road numbers still in use were assigned to new engines on order and there were cases when the same number was used concurrently on two different engines. Apparently no exact record of many of these changes were kept, and transfers appear in the company records as having taken place, which seemingly were proposed and abandoned before consummation, so that a record 100% correct can hardy be compiled.

The gauge of track was changed on the Main Line from 6-foot to standard in 1876, and in anticipation of this change, locomotives were purchased from other roads, and were shifted from one division to another in an effort to keep traffic moving in spite of the large number of engines out of service, waiting to be "narrowed down".

Very little attention has ever been given to classification such as has been developed by the Reading and Pennsylvania Railroads. Prior to the renumbering in 1899, the Main Line, on their monthly "Performance Sheets" designated eight-wheelers as Class A, moguls as Class B, ten-wheelers as Class C, consolidations as Class D, and switchers as Class E. The Buffalo Division designated eight-wheelers Class A, Moguls Class B, consolidations Class C and switchers as Class D. There were subdivisions of these classes, but the classification served only to identify the engines shown on the sheets, and an explanatory legend appeared on each sheet.

With the renumbering of 1899, engines were classified with regard to diameter of cylinders and diameter of driving wheels, there being shown 21 classes with subdivisions in the roster of the renumbering. The identification of locomotives by these class numbers never became prevalent, but engines were known generally by their road number series, for example, moguls were referred to as the 500 class, eight-wheelers as the 900 class and ten-wheelers as the 1000 class. Local nicknames were applied in a few isolated cases. Engines 385-399 (new series) were called "Teddy Bears", and engines 801-853 and 1001-1007 were called "Brook's Hogs", although 816 to 830 were built by Dickson.

Engines were named as well as numbered on all branches and divisions except the Buffalo Division. Names were selected, as a rule, from one of four sources, namely, company officials and directors, stations, Indian names and men nationally prominent. Two locomotives bearing the name of a superintendent, one on the Main Line and one on the Bloomsburg Division, were hastily changed when the erstwhile official got into difficulties and the newspaper headlines.

The names TEKAHARAWAY and POPOKOPHUNK were too difficult to handle and gave way to Great Bend and Pohatcong, although SAMUEL SLOAN AUCHINCLOSS used up as much gold leaf as either of the others. Oregon, Moses Taylor and John J. Phelps became General Grant, General Sherman and General Sheridan in a wave of Civil War patriotism.

Drake Mills was changed to Mehoopany and Union to Montrose for no apparent reason, while Fairfield, Southport, Constitution and Black Hawk became John Brisbin, W. E. Dodge, G. Bogart and Ira Tripp, in order to do honors to these gentlemen who were officials of the company.

The discontinuance of the use of names began in 1880. Engines 140-144 of the Main Line, built by Dickson in 1880, were about the last new engines to receive names, although many engines already named continued to carry them until the late 1890's.

On the M. & E. division engines Oxford and Roseville exchanged names, as did A. Reasoner and Weehauken, the latter change probably to tickle the vanity of Mr. Reasoner by taking his name off of a freight engine and placing it on one in passenger service.

Main Line engine No. 85 was originally named A. Lincoln, but was completed right at the time the President was assassinated, and the engine's name was changed to A. J. Odell immediately. The engine never ran on the road with the original name.

THE BUILDERS

In the earliest days, a list of the companies building locomotives for the component divisions would have included the country's foremost engine manufacturers, such as Boyden, Baldwin, Rogers, Ketchum & Grosvenor, Danforth & Cooke, Winans, Portland, Rhode Island, Taunton, Hinkley and Drury and others, all reflecting the characteristics of their respective builders.

Company built engines did not appear until the late 1860's. The first one built by the Main Line was the Walter Dawson, a 4-6-0, built at Scranton in 1869, and renamed New York in 1876. Incidentally, this was the first road engine to be equipped with culm burning firebox, which change was made at the Kingston Shops. In accordance with the practice of the day, and even after their absorption by the Lackawanna System, the various divisions built their own power, or at least drew up specifications for engines deemed to be most suitable for their respective operating conditions, resulting in a wide variety of practices. It was not until 1899, when the final consolidation took place, that

standardization of equipment as known today was begun, and the locomotive of the 19th century, with its individuality, was superseded by one which was just another engine in the mass production of the large locomotive companies.

For a few years, in the beginning, it appeared as though the Rogers engine would prevail on the M. & E. and Main Line, but Danforth & Cooke gradually got the inside track, followed closely by the Dickson Company, to the practical exclusion of all others, so that by 1899 about 80% of the engines in service had come from one or the other of these two builders. As the smaller divisions were taken over, their motive power was replaced as needed by older engines from the larger divisions. Heavy repairs and construction were confined to the shops as follows: M. & E. Division, Kingsland, N. J., Main Line-Bloomsburg Division, Scranton and Kingston, Pa., Buffalo Division, East Buffalo, N. Y., O. & S., and S. B. & N. Y. at Syracuse, N. Y., and Utica Division at Utica, N. Y. Occasionally one division built engines for another, as in the case of engines F. J. Griffith and S. Griffith built at Syracuse for the M. & E. Division, and engines built at Utica and Kingston for the Main Line.

In the 1880's and 1890's, many passenger engines were rebuilt at the company shops, and with the introduction of the wide firebox for burning fine anthracite, engines in large numbers were so equipped, the rebuilding virtually producing a new machine and prolonging the life of the engine far beyond the average. It was the adoption of the wide firebox which developed a class of motive power peculiar to the section of the country depending on anthracite for fuel, and which fuel influenced the design of the hard coal road's engines for years.

To cite several cases of longevity due to such rebuilding, Engine No. 5, Montrose, an eight-wheeler built by R. K. & G., in 1851, was changed to No. 4, renamed Constitution and equipped to burn coal in 1861. In 1887, she was rebuilt with wide firebox, at Kingston Shops, and renamed G. Bogart. She was changed to 467 in 1899 and scrapped in 1911, age 60 years. Engine No. 31, Drake Mills, was built in 1856, rebuilt in 1899, changed to No. 409, scrapped in 1924, age 68 years. Engine No. 6, Niagara, built in 1852, rebuilt 1898, changed to No. 408, scrapped 1923, age 71 years.

Perhaps the most thorough and logical course to pursue in the study of the motive power of the Lackawanna Railroad would be to consider each of the constituent lines as a unit and trace its locomotives from the date of incorporation through to the consolidation of 1899. However, as such procedure would entail a study of more than a dozen lines, and, as the smaller divisions lost their individuality, if not their actual identity, upon merging with the larger system, the original equipment of these small lines can be described and passed over briefly, more attention being given to the three large divisions, namely, the M. & E., Main Line-Bloomsburg Division and Buffalo Division.

Having been chartered for legal reasons only, in connection with extensions, rights-of-way, etc., there is nothing to record regarding

motive power on the Warren Railroad, Lackawanna R. R. of New Jersey, Lackawanna & Montrose, Hanover & Newport and Greene Railroad.

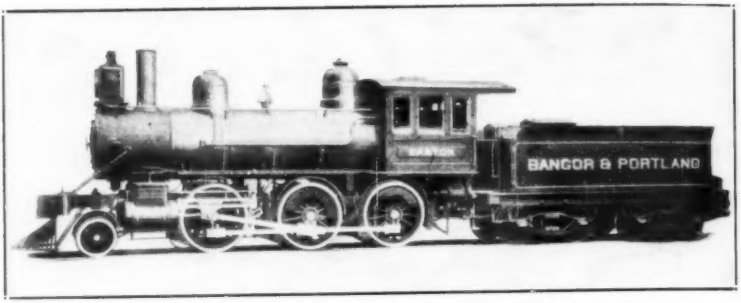
The Newark & Bloomfield, chartered in 1855, had one engine, a 4-4-0, built by the New Jersey Locomotive Works in 1858. This engine was named Bloomfield and became No. 57 on the M. & E. when acquired by that road in 1868. The Bloomfield was scrapped in 1887.

The Passaic & Delaware's lone eight-wheeler, named Schuylkill, became M. & E. 23, renamed Sterling, in 1882, and was scrapped in 1893.

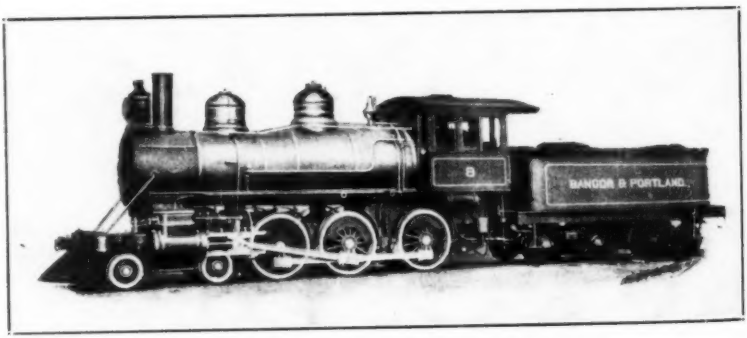
The Sussex Railroad, chartered in 1854 had nine engines. Its No. 1 and No. 2 are said to have been purchased from the Erie about 1854, and changed to David Ryerson and Governor Haines. It is likely that they were later changed to Aaron Peck and A. S. Hewitt and were traded in as part payment for No. 8, the Newton, received from Cooke in 1879. Engines 3 to 8 were likewise of the 4-4-0 type and 9 was a mogul. These engines were named as follows: John I. Blair, Franklin, Wallkill, Old Sussex, E. F. Hatfield, Jr., Newton and Mt. Holly. All were built by Danforth, Cooke & Co., between 1865 and 1881.

The Bangor and Portland Railroad, in the heart of the Pennsylvania slate belt, was acquired by the D. L. & W. in 1901, and was the possessor of four eight-wheelers, 3 moguls and 2 ten-wheelers. The No. 1 had been purchased from the D. L. & W. in 1879, and was formerly the Madison of the M. & E., built by Danforth, Cooke & Co., in 1864. No. 2, PEN ARGYL, was built by the same builders in 1882. No. 3, Nazareth, was purchased from the Belvidere & Delaware. The others were all Cooke engines, 4, 5, and 7 being named Portland, Martin's Creek and Easton, while 6, 8 and 9 were not named. Nos. 1 and 2 were scrapped shortly after being taken over by the Lackawanna. Numbers 3 to 9 were not renumbered to D. L. & W series, but retained their original numbers, except that 8 and 9 were changed to 688 and 689 in 1911, and were sold to the Wharton & Northern in November 1919.

The Lackawanna and Bloomsburg R. R., with headquarters at Kingston, Pa., was chartered in 1852, and merged with the D. L. & W. in 1873. The heavy anthracite tonnage originating on this line made it one of prime importance. Its earliest engines were eight wheelers, ten wheelers and Baldwin 0-8-0's with flexible beam trucks. These engines were acquired from various sources and some were second hand. Engines 1 and 2, named Susquehanna and Nanticoke were replaced with engines built at Kingston, in 1871, from which date many engines were built at Kingston, both for the Bloomsburg Division and Main Line. Much of the development of the culm burning firebox, or "Mother Hubbard" was accomplished on this line. In 1886, the L. & B. engines were renumbered to the 200 class, to follow in sequence the engines of the Lackawanna. Among other engines constructed at Kingston was a 2-6-2, named Luzerne, perhaps the earliest to have this wheel arrangement, and introducing the use of the trailer truck in its modern form to the D. L. & W.



B. & P. #7—D. L. & W. #7—Cooke, 1893.



B. & P. #8—D. L. & W. #8-688—Cooke, 1898.

Engines 240 to 246, a group of culm burning passenger eight wheelers, well known for their performance on the Main Line were built at Kingston Shops. (A detailed account of the locomotives of this division appeared in Bulletin No. 47).

The Syracuse, Binghamton and New York Railroad was chartered July 2nd, 1851. Seven eight-wheelers were purchased from Hinkley & Drury in 1853 and five in 1854. All were inside connected. In 1868, engines 2 to 12 were either renumbered or the names were shuffled about, the engines all being alike it is difficult to determine just which occurred. Two new moguls, named McClellan and Von Moltke, were received from Cooke in 1867. Several engines were transferred from the Main Line and Bloomsburg Division during the next few years, and apparently the road bought a Baldwin 2-8-0 from the N. Y. & O. M. This was one of two built in 1872, and contrary to early practice, the main rod was connected to the third pair of drivers, instead of the second pair. In 1879, this engine was sent to the Main Line, becoming their No. 34, Pocono, and was rebuilt to a culm burner in 1893. In 1899 she was changed to 745, and subsequently to 737 and 715, spending the last of her 49 years of service in the Hoboken passenger coach yards.

The Syracuse shops did all of the repair work for the S. B. & N. Y. and the Oswego & Syracuse branch, and, in addition to converting many engines to culm burners, built a number of freight and passenger engines.

There is very little available data on the early Oswego & Syracuse engines. It is evident that their first engines came from Rogers, Ketchum & Grosvenor, in 1849 to 1851. They were engines Oswego, Ontario and Frontier, bearing builder's numbers 168, 169 and 271 respectively. They were probably 4-4-0's, having 5 ft. driving wheels and 11½x20″ cylinders. Records indicate that engines Vixen and Toronto were in service at this time. In 1870, four engines, Thompson Kingsford, John Dunn, L. L. Kenyon and James Frazee, were purchased from the Oil City and Alleghany Railroad. Whether these names were on the engines when received or were put on by the O. & S. is a matter of conjecture. They were transferred to the Utica Division in 1874, and the Kenyon and Kingsford were returned to the O. & S. in 1875. Engine F. T. Carrington, an eight-wheeler by Rogers, in 1855, with 12x22″ cylinders and 5 ft. drivers, was rebuilt in 1885 to an observation engine. It was changed to No. 98 in 1899 and to "C" in 1902. It was scrapped in 1908.

The Erie and Central New York was acquired in 1903. There were three eight-wheelers on this road, viz: No. 1, I. H. Palmer, No. 2, no name, a former Lehigh Valley engine, and No. 3, W. D. Tisdale, built by Baldwin in 1881. These engines retained their original numbers and were disposed of in 1913, 1909 and 1904, respectively.

The Utica, Chenango and Susquehanna Valley was chartered January 11th, 1866, and between 1867 and 1870 purchased 8 eight-wheelers from Schenectady as its first power. This division probably witnessed a greater variety of engine transfers than any of the other small divisions. Of the foregoing eight, only one remained on the division for the

balance of its years of service. Four were sent to the M. & E., and three to the O. & S. It subsequently received engines from the Main Line, Buffalo Division, Bloomsburg, M. & E., and S. & B. divisions, the D. & H. and the Ohio & Mississippi Railroads, as well as new engines from Dickson and its own Utica shops. These shops also rebuilt many engines to culm burners and two freight moguls for the Main Line.

Many of the above transfers took place in connection with the change of gauge. For part of this period both six foot and standard gauge were used on this division, the northern end being wide gauge, the southern being standard.

The Ithaca & Oswego Railroad, or Cayuga Branch, is the oldest part of the Lackawanna System. It was chartered in 1828, re-organized in 1843 and called the Cayuga and Susquehanna Railroad. It was sold to the Leggetts Gap Railroad in 1849 and to the Delaware, Lackawanna & Western in 1855. Its original engines were inside connected eight-wheelers, built by R. K. & G., 1849 to 1851, and were named W. R. Humphrey, G. W. Scranton, Simeon DeWitt and Ithaca. Early details are very meager, but it is evident that the Humphrey was renamed Lackawanna and scrapped about 1878-9. The Scranton and DeWitt were likewise scrapped about the same time, and were replaced by the Colonel Wells and the Shawnee, from the Bloomsburg Division. The Ithaca was sold to the Lackawanna and Western in 1851, to become their No. 6. It is recorded that Main Line engines Tunkhannock and Lackawanna were sold to the Buffalo & New York City Railroad, and were later purchased from that road by the C. & S., and they appear as Nos. 4 and 5 on the roster of equipment leased to the D. L. & W. in 1855. Two other engines, Pocono, No. 6, and Wyalusing, No. 7, appear on the same roster, having been purchased from the D. L. & W. in 1855. Both were ten-wheelers, cylinders 17x24", 54" drivers and weighing about 33 tons. The original engines Tunkahannock and Cayuga were replaced by eight-wheelers, said to have been similarly named, and of whose origin nothing is available.

The Pocono was scrapped and was replaced by the Musconetcong from the Main Line, in 1870, at which time the Wyalusing was traded to the Main Line for the Genesee, built by R. K. & G. in 1852.

The Buffalo Division was opened in 1882. It is the newest of the large divisions and, in general, its motive power is not of as much interest from a historical standpoint, and due to the large numbers in which its engines were ordered, they lack individuality.

The first 81 engines consisted of 13 Cooke eight-wheelers, 14 Dickson eight-wheelers, 31 Cooke and 18 Dickson moguls and five switch engines. This was in 1884, from which time on nearly all of the additional engines received on this division were "transfers" from the Main Line. Several consolidations were in use at one time or another, and in 1892, eight new culm burning moguls were received from Dickson's, which were transferred to the Main Line in 1898.

Engine 84, a mogul, was the first engine built at the East Buffalo Shops, and was followed by No. 98 in 1889. Following this, a majority

of the passenger locomotives were rebuilt with wide fireboxes. Worthy of note are two narrow firebox eight-wheelers, Nos. 133 and 134, having 73" drivers, were built at East Buffalo in 1892. This was the largest driver that had been used on the road. Engines 72 and 74 were later equipped with similar wheels, and all four engines of this class were noted for their speed.

The Buffalo Division, in rebuilding their lump coalers to culm burners, placed the main steam dome in the cab, as was the general practice on the D. L. & W. at that time. (Starting in the 1890's and continuing thereafter, the main dome was placed ahead of the cab.) A small sandbox was also located in the cab, and the bell was placed over the firebox.

In front of the cab, there was an auxiliary steam dome, containing safety valves and the whistle. This dome was about the same height as the cab, but of small diameter. It was later found that, in stopping a train, the water in the boiler surged forward and out through the safety valves. In case of station stops this resulted in a drenching of persons throughout the entire length of station platforms. On engines so built this objectionable feature was never overcome, but on later engines the auxiliary dome was eliminated, the whistle and safety valves were put on the main steam dome, and a regulation size sandbox of conventional design was placed on top of the boiler, in front of the cab.

The Main Line and the Morris & Essex Division probably merit more attention, in a review of motive power development, than the other divisions. These two roads together contributed more locomotives than all of the others combined, and, excepting only the Ithaca & Oswego, were the oldest sections of the road.

The M. & E. began operations with a 4-2-0 type engine, the Orange, built by Seth Boyden, at Newark, N. J., in 1837. The Essex, from the same builder came the following year, as did the Speedwell from Stephen Vail. The Orange remained in service until 1863. The Essex was sold to the Iron Railroad of Ohio, in 1851, while the Speedwell proved unsatisfactory and was returned to Stephen Vail in 1846, in exchange for the Dover, a 4-2-2, built by Baldwin.

The earliest engines were of the 0-4-0, 4-2-0 and 4-2-2 types, after which the road adopted the prevailing types of the period, namely 4-4-0 for freight and passenger service, and later the 2-6-0 for freight service, and the 0-6-0 for yard duty. The 4-4-0, although used at first as an all-service engine, became the standard passenger engine, remaining as such until 1905, with only slight opposition from the ten-wheeler in the late 1890's. Many of the early eight-wheelers were thoroughly rebuilt in the period between 1880 and 1899, but none were converted to culm burners.

Engine Sussex, built by R. K. & G. in 1846, bearing construction No. 82, was the first 4-4-0 on the system, and the first locomotive to be ordered specifically for freight service. She was scrapped in 1859. The Sussex was followed by the Morris, R. K. & G 1849, Warren, R. K. & G. 1850, Hudson and Delaware from D. C. & Co. 1853, Musconetcong and

Pequest in 1854, Passaic, Swinburne 1856, and Pohatcong in 1858. These engines had all been disposed of by 1868, and were replaced with new mogul type freight engines, built by Cooke, the first of which were named Orange, Dover, Millburn, Rockaway, Warren and Chatham, and which introduced the type that was used almost exclusively for freight traffic until the beginning of the twentieth century.

Meantime, twenty-eight more eight-wheelers had been put in service, among which were the Waterloo and New Jersey, built by the Portland Locomotive Works

No additions were made to the motive power between 1858 and 1864, but starting with that year there was a rapid increase in locomotive construction, and by 1870, there were 75 in service. Of these 75, there were three ten-wheelers from Baldwin in 1868, Denville No. 59, Troy No. 60 and Caldwell No. 61, the only engines of this type used on this division until 1893.

Between 1867 and 1869, Baldwin also furnished four consolidations viz: Dynamis No. 56, Economy No. 58, Atlantic No. 66, and Wayway-anda No. 67.

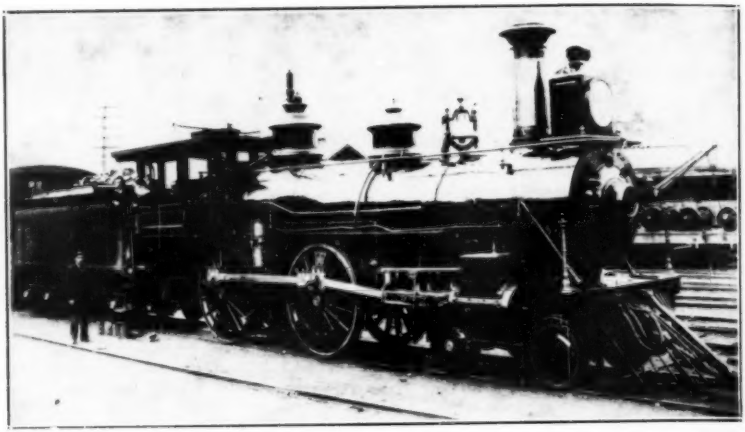
The first engines from the Dickson Company were received in 1869, four moguls bearing road numbers 70 to 73. Also received in the same year was engine Secaucus No. 75, from Cooke. This engine was rebuilt in 1896, and in 1902 was changed to observation engine "A", scrapped in 1924.

In 1871, seven eight-wheelers were purchased that had been built for the Ohio & Mississippi R. R., five of the seven having been transferred to other divisions by 1876. Two were replaced by moguls from the Utica Division, which division had in turn received them from the Lackawanna & Bloomsburg R. R.

In 1879, engine Madison was sold to the Bangor & Portland R. R., and engines Morris No. 25 and Hudson No. 39, were sold to the Rome, Watertown & Ogdensburg R. R. In 1882, engines F. J. Griffiths No. 114 and S. Griffiths No. 115 were received from the S. B. & N. Y. These were the last new engines to be given names.

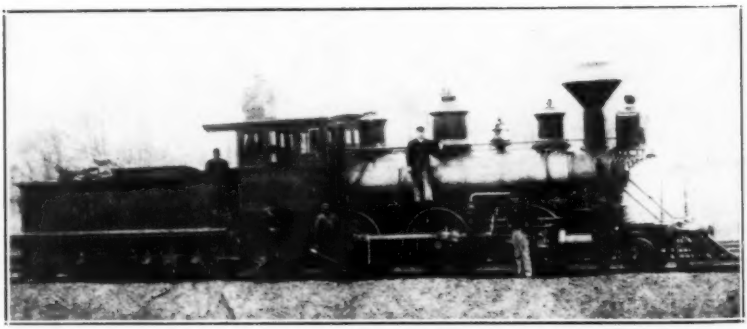
The first culm burners to be put in service on this division were moguls Nos. 41 and 135, built by Cooke in 1887, but culm burners for passenger service were not used until Nos. 91, 163 and 164 were received from Dickson's in 1896. To answer the demand for heavier power to handle the ever-increasing size of trains, two culm burning ten-wheelers were received from Cooke in 1893. They are generally similar in design to Main Line Nos. 7 and 15 built at Scranton, and No. 247 built at Kingston.

Company records claim very few new engines built at Kingsland shops, although extensive rebuilding was done. At the time of rebuilding, diamond stacks gave way to crown stacks, the old design domes and sandboxes were replaced with the more modern rounded ones, automatic couplers were installed, wheel guards were removed and smoke boxes were extended. In fact, it is very difficult to tell, either from company records or from an engine's appearance, whether an engine was newly



Courtesy of Dr. F. F. Sornberger.

S. B. & N. Y. #5—D. L. & W. #913—Dickson. 1882.



L. & B. "Luzerne" #15-222—D. L. & W. #168—Kingston Shops. 1878.

constructed or rebuilt. In many rebuilding jobs it is a matter of doubt as to just how much, if any, of the original engine was used. It is probably the origin of the gag that much rebuilding meant "jacking up the bell and building a new engine under it". On this division only one engine was converted to a culm burner, that being No. 70, which was renumbered 62 in 1899, and subsequently 44, 29, 179 and finally 7, when in 1914 her front truck was removed. She was sold to the American Car & Foundry Co., in 1919.

The Morris & Essex, handling the heavy commuter service out of Hoboken, in 1899 had 77 passenger engines, about 48% of its total locomotives. A large number of these were small and old, having 17" and 18" diameter cylinders, and were discarded shortly after the turn of the century. Inasmuch as this division had no grades comparable to those of the Main Line, with which to contend, there was not the incentive to keep apace with locomotive development as was necessary on the other divisions.

For switching service there were two 0-4-0's, Jennie and Jos. Scranton, and seven 0-6-0's, Verona, Ida, Eva, Ella, May and Grace. These latter were equipped with side tanks and had the cab located high in order to obtain a good view of the yards and switching signals. Other than these, the mogul type predominated in switching service, a number of which, in later years, were built with culm burning fireboxes.

The records regarding the locomotives of the Main Line are rather complete, although, at this time, it has not been determined whether or not the very early engines bore road numbers. Various sources show different numbers for engines of a given name, and these sources, generally annual reports, may have intended the numbers shown to be item or line numbers rather than locomotive numbers.

However, the relation between names and numbers takes on no stability until 1857. It is apparent that, if the engines did bear road numbers prior to this date, there was a general renumbering in 1857. On the other hand, if road numbers were not used prior to 1857, it is evident that the practice was begun in that year. It is true that drawings of engines built before 1857 are available, but the numbers shown on such drawings are those that were in use in later years. There is nothing to indicate that the original engines, three eight-wheelers and three ten-wheelers were numberd from 1 to 6.

The Pioneer, a 4-2-0, was built by MacQueen in 1840, was purchased from the Ithaca & Owego R. R., and the Spitfire, and 0-4-0, built by Braithwaite, England, 1838, purchased from the Philadelphia & Reading, were the first locomotives on the Leggetts Gap Railroad. These were used primarily for construction purposes, and may have been used to some extent in passenger and freight service, but the first engines ordered for road service were the Wyoming, Abington and Montrose. These were 4-4-0's, with 16x20" cylinders, and 66" driving wheels, built in 1851 by R. K. & G., and generally similar to those built for the Cayuga & Susquehanna. They bore construction numbers 281, 287, and 282.

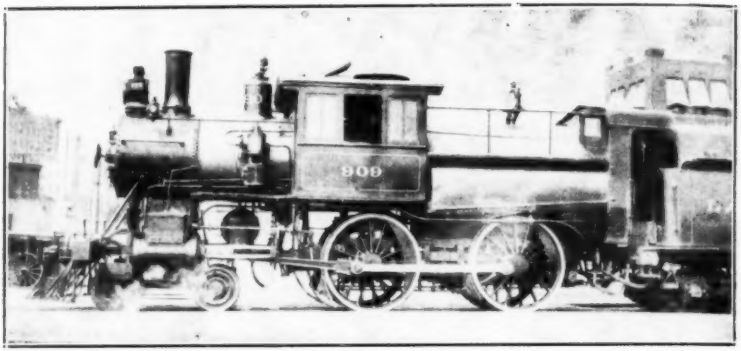
Three ten-wheelers, Capouse, Lackawanna and Tunkhannock, were included in this order from the same builders. They had 18x20" cylinders, 77" driving wheels, and bore construction numbers 278, 262 and 266. Both classes were inside connected, but were changed to outside connected at an early date. Whereas the M. & E. had early adopted the American type for both freight and passenger traffic, it is evident that on the Main Line the ten-wheeler gave very satisfactory results, for until 1865 only six more eight-wheelers had been placed in service. These were Plymouth No. 22, Southport No. 57, Colonel Scranton No. 60, Fairfield No. 66. John J. Phelps No. 87, Moses Taylor No. 88, and the Ithaca No. 6, which had been purchased from the C. & S. in 1851. The Plymouth was transferred to Utica Division No. 12 in 1872, Southport was renamed W. E. Dodge in 1865 and Sam Sloan in 1876. She was transferred to M. & E. No. 146 in 1891. The Colonel Scranton was changed to No. 1, in 1892. The Fairfield, built by Taunton, 1857, and originally equipped with a water tube boiler was renamed John Brisbin, and was changed to No. 3 in 1892. The John J. Phelps became M. & E. No. 87. In 1889, the Moses Taylor was sent to the M. & E. to become No. 26, and was replaced by a new culm burner 4-4-0, built at Scranton. Two more eight-wheelers, E. F. Holden No. 126 and P. Elmendorf Sloan, No. 127, were received from Cooke in 1871, but were shortly transferred to S. B. & N. Y. Nos. 15 and 16. The 127 was replaced by a 4-4-0, Thomas Dickson, built at Scranton, in 1871.

About this time, it became apparent that it would be advantageous, if not absolutely necessary, to adopt the standard track gauge to replace the existing 6 foot gauge. In anticipation of such a change, locomotives ordered in the years immediately preceding the change, which took place January 1st, 1876, had the cylinder casting made with a filler block between the right and left head cylinders, so that in "narrowing" the engines, the removal of this block left the cylinders ready for the narrower gauge engine.

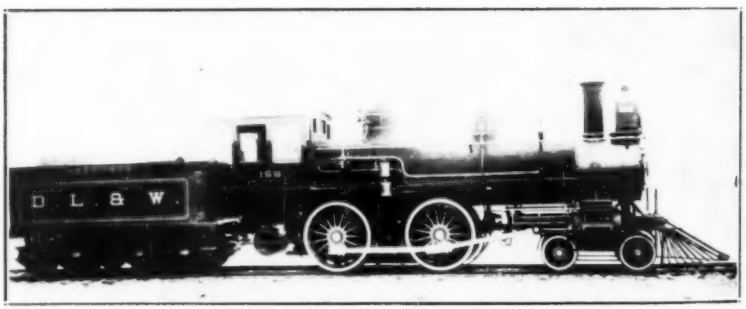
The change was responsible for a large number of new engines being brought on the road, the Baldwin Company furnishing two American type, five consolidations and 10 moguls. The 4-4-0's were the Walter Dawson and W. F. Hallstead, Nos. 134 and 135, which were changed to 8 and 9 in 1892, and later rebuilt with wide fireboxes.

The first two culm burning passenger engines built for the Main Line were William S. Sloan, No. 188, and G. M. Hallstead, No. 189, by the Cooke Works, in 1887. As built these engines had 956 sq. ft. of heating surface in the flues and 148 sq. ft. in the firebox and combustion chamber. This proved insufficient and the boilers were lengthened to provide a total of 1494 sq. ft.

Between 1889 and 1893, seven culm burners, Nos. 240 to 246, were built at Kingston shops for the Main Line. These engines had 19½" x 24" cylinders, 69" drivers, and 1491 sq. ft. of heating surface. They were the highest development of this class of power under the Sloan Management, and in the conversion of lump coal burners to culm burners, the design of the 240 class was closely followed.



D. L. & W. (Bflo. Div.) #909, ex #67.—Cooke, 1883, Reb. 1896



D. L. & W. (M. & E. Div.) #158, Re. 539—Cooke, 1892.

The 900 class, so familiar in suburban service out of Hoboken and on the branch lines, was but one step beyond those constructed at Kingston for the express service of the 1890's. Some of the 933-999 class were eventually modernized with superheaters, piston valve cylinders and Baker Valve Gear. A program for similarly converting all of this class was cut short by the electrification of the New Jersey suburban area. In 1937, some of the very few remaining engines of this class were altered by removing the center cab and placing it behind the firebox, and while this had been the practice on many hard coal roads for a number of years, these 900's and several of the 1000 class were the only ones so changed on the Lackawanna.

To go back to the ten-wheelers, which in the beginning were adopted for freight service, new engines of this type were placed in service yearly until 1870, at which time almost one hundred were in service. In the 1850's, a number of six wheel connected engines were tried out, but the success of the ten-wheelers resulted in most of these engines being changed to the 4-6-0 type. Several of the early six wheel connected engines were of the 2-6-0 type, but were not true moguls as the leading truck was placed to the rear of the cylinders. These engines were also rebuilt to ten-wheelers. The 4-6-0's of this period had inclined cylinders, the horizontal center line of which was above the center line of the driver axles. The center pin of the engine truck was well ahead of the cylinders. The era of the ten-wheeler began to decline with the introduction of the mogul type in 1870, and it was not until 1892 that another ten-wheeler came on the road. In that year No. 16, a culm burning Vauclain compound was received from Baldwin's. The 16 was followed in 1893 by a similar, but single expansion, 4-6-0, No. 15, built at Scranton and in 1894 by a Cooke cross compound, No. 17, and a single expansion ten-wheeler No. 247, built at Kingston. There was keen interest in the performance of these engines, and many stories are told of the extremes to which various master mechanics went in order to prove their engine to be the best. Both compounds were subsequently changed to simple engines. In 1899, this group became the 690 class and in 1913-14, old Nos. 7, 17 and 247 were equipped with new boilers, fireboxes, cabs and boiler fittings similar to the 900 class, making a very presentable engine, and were used in local passenger service at Hoboken.

In 1900, seven culm burner ten wheelers, Nos. 1001-1007, were received from the Brooks Works, designed to perform extraordinary service in the handling of passenger trains They were unsuccessful from the beginning. Blame was placed everywhere from the size of the steam passages to the piston valve cylinders, but no amount of change would bring their performance up to expectations and they were relegated to milk service. Eventually they were given superheaters, piston valve cylinders and Walschaerts Valve Gear and used in New Jersey commuter service.

The eight-wheelers, which were to have been superseded by the Brooks engines, continued in passenger duty, but the constant demand for increased power forced the company to again try the ten-wheeler, and engines 1008-1012 were ordered from Schenectady in 1905, to be

followed by 1013-1016 in 1906. This type was gradually developed and improved until 1912, at which time the Pacific type was placed in service. Engines 1008-1052 were highly successful and well liked by the men who handled them.

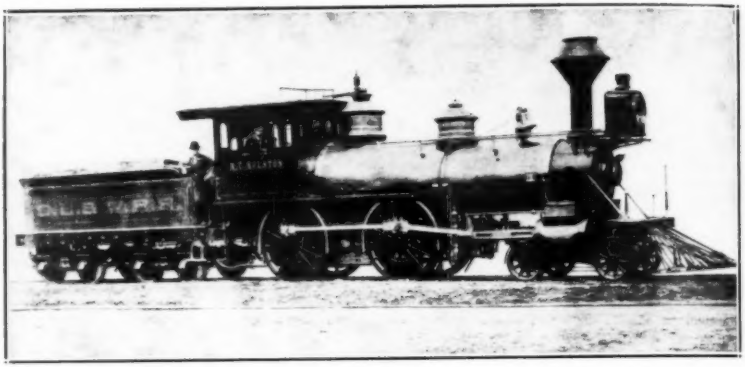
The Mogul type, which almost completely eclipsed the ten-wheeler, first appeared in 1866, with the placing in service of the John Brisbin, Cooke 1866, on the Lackawanna & Bloomsburg R. R. and several in the same year on the M. & E. R. R. It was not until 1870, however, that it was first used on the Main Line, in which year four were received from Cooke and five from Dickson. Immediately this type proved successful, and was ordered to the exclusion of all other types for freight service, except a few consolidations, until well into the 1890's, and eventually developed into the 534-589 class, which handled manifest freight until 1912.

The first culm burners built new by the Main Line were moguls, Nos. 145 and 146, built at Scranton shops in 1882, and, incidentally were the first engines of the mogul type to have 19" diameter cylinders. There were 20 of the large center cab moguls, Nos. 570 to 589, built for fast freight service, as well as 36 soft coal burners, Nos. 534 to 569. These engines all had 20½"x26" cylinders and 69" drivers, and the standard fast freight engine until superseded by the Pacific type in 1912.

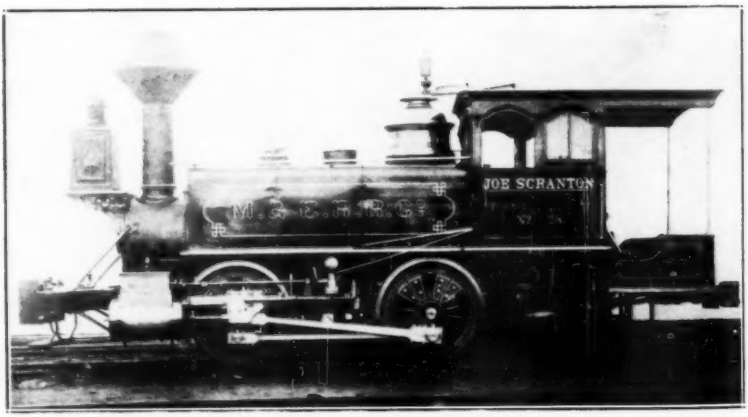
The mogul type was never used extensively for passenger service, although in 1891, the Main Line and M. & E. each received a number with 63" driving wheels for milk train service, which trains ran more or less on passenger train schedule.

The earliest eight-wheel connected engines, and what were probably the forerunner of the consolidation type were six Winan's "Camels" which appeared early on the roster of equipment. These were the Carbon of 1854, and the Maryland, Vermont, Virginia, Connecticut and Michigan of 1856. Their unworthiness was quickly proved, as they were, excepting the Carbon, scrapped in 1859. The Carbon lasted until 1878, when it was replaced by a Dickson mogul of the same name.

In 1876, the Baldwin Locomotive Company built five consolidations for the Main Line. These were named Ajax, Hector, Goliath, Achilles and Milo. These were followed by four, Roaring Brook, Nay Aug, Pohatcong and Meshoppen, from D. C. & Co., in 1879. All engines had 20"x 24" cylinders and 51" drivers. They were typical of the engines of that period, with main rods connected to the second pair of drivers. In 1880, from the same builders were received engines Trajan, Jason, Hannibal and Archimedes, introducing the culm burning firebox to the D. L. & W. The Dickson consolidations of 1884 had narrow fireboxes, but in 1888 eleven with wide fireboxes were built by Cooke, road numbers 190-200, and in 1889 there were three from Dickson's, Nos. 246 to 248. No other consolidations were built until "Dave Brown's No. 888" was constructed at Scranton shops in 1899. This was a culm burner with 22"x30" cylinders and 57" drivers, and later became the pattern for a class of consolidations developed for freight service when the Brooks 4-8-0's of 1899 and 2-8-0's of 1900 proved to be poor road engines and were assigned to pusher service.



D. L. & W. (M. & E. Div.) "R. C. Rolston". Re. 130—Dickson. 1875.



M. & E. "Joe Scranton" #78.—Cooke. 1870.

The consolidations of the 1876-1889 period were used generally on mine runs rather than for road service. The last few of them ending their days in coach yard service at Hoboken.

There were very few yard or switching engines of other than the 0-6-0 type. Engines Elizabethport and Syracuse were of the 0-4-0 type and L. & B. 211 was an 0-4-2. The first two were received from Danforth, Cooke & Co., in 1867. The Syracuse was transferred to the S. B. & N. Y. in 1879, becoming their No. 1. The Elizabethport, No. 100, became Utica Div. No. 13, 1875, and was returned to the Main Line, as No. 20, in 1885. In 1896 it was sold to the Coal Mining Department, their No. 22, and in 1908 was again returned to the Main Line retaining this number until scrapped about 1913.

The standard yard engine was of the 0-6-0 type, having side tanks, and with the cab perched on top of the tanks and over the firebox, enabling the engineer to obtain an unobstructed view of the tracks and the signals from switchmen. These engines were equipped with a four-wheel "supply car," which carried coal, but no water. The Hercules No. 21, one of this class, was probably the first engine on the road converted to a culm burner.

The mogul type was tried out for yard service in the 1880's, but these engines subsequently had the pony truck removed. After 1900, quite a large number of moguls and consolidations, outmoded as road engines, were assigned to switching service. Several of the moguls so used were converted to 0-6-0's.

The foregoing has sought to trace the growth of the motive power of the Lackawanna and its subsidiaries from the road's earliest days to the end of the Nineteenth Century, at which time the engines were renumbered and classified under one system, and at which time locomotives in general assumed new lines and proportions.

Outside of the development of the culm burning firebox, in which the Lackawanna Railroad played a most important part, this road introduced no radical departures from the current practices of the day. While the motive power policies may have been conservative, there was no reluctance to keep abreast of the times with engines that performed up to the expectations of the owners, and whose design and maintenance were on a par with those of the rest of the country.

The following is a recapitulation of those engines considered as "Old" equipment, either in service or under construction in the company shops, at the close of the Sloan management.

Official Listing		As Corrected	Building in Co. Shops	Old equipment acquired after 1899	Total
Main Line	209*	208	2 (888-963)	-	210
Bloom Div.	31	31			31
M. & E. Div.	160	160	2 (522-962)		162
Sussex	6				6
Buffalo	132**	130			130
Utica	26	26			26
O. & S.	14	14			14
S. B. & N. Y.	20	20			20

Cayuga Div.	5	6		0
E. & C. N. Y.			3	3
B & P.			9	9
TOTAL	603	601	4	12	617

* Includes one that should be credited to Cayuga Division.
** Only 130 actually listed.

CLASSIFICATION OF LOCOMOTIVES
NEW SERIES

Class	Drivers No.	Drivers Size	Cyl'nds. Size	Cyl'nds. Sizes	Numbers From	Numbers To	Number In Service
1	All	Sizes	All	Sizes	1	90	66
Obs'n.					98	99	2
2	4	56	16	22	101	103	3
2A	4	56	16	24	104	107	4
2B	4	57	15	22	108	109	2
3	4	57 3/8	17	22	110	118	9
3A	4	50 3/4	17	22		119	1
3B	6	50	17	22	120	121	2
4D	6	44	17	24		122	1
4E	4	54	17	24		123	1
4	4	57 3/8	17	24	125	140	16
4A	4	56 etc.	17	24	142	145	4
4B	4	62	17	24	146	149	4
4C	4	50 3/4	17	24		150	1
5	6	44 etc.	18	24	160	165	6
5A	6	45	18	24	168	169	2
6	6	50 etc.	18	24	201	406	204*
6A	6	56 3/8	18	24	408	409	2
6B	6	48	18	24		411	1
6C	6	51	18	24		413	1
7	6	48	18	22	415	416	2
8	4	57 3/8	18	22	418	419	2
8A	4	62 3/8	18	22		420	1
9	4	56 etc.	18	24	425	432	8
9A	4	57 3/8	18	24	435	449	15
9B	4	62 etc.	18	24	455	472	18
9C	4	60	18	24		480	1
10	6	45	19	24	501	513	13
10A	6	56 etc.	19	24	515	521	7
10B	6	51	19	24	525	526	2
11	4	57 3/8	19	24	530	540	11
12	6	50 3/4	19	24	601	677	77
13	6	50 3/4	19	26	685	686	2
14	6	50 etc.	20	24	690	693	4
14A	6	62 3/8	20	24		695	1
15	6	62 3/8	20	26		697	1
16	6	56 3/8	21 x30 x	26		699	1
17	8	45	20	24	701	735	35
17A	8	44	20	24	740	741	2
18	8	45	19	24		745	1
19	4	62 etc.	19	24	901	960	60
19A	4	66	19	24	965	968	4
20	4	56 3/8	19	24		969	1
21	4	62	20	26	971	972	2
							603

Effective with the renumbering of May 15th, 1899.

* Only 202 engines in this group.

THE BALDWIN LOCOMOTIVES OF 1876, FOR THE D. L. & W.

Road No.	Name	Builder's Number	Type	Subsequent Numbers	In 1899 To
134	Walter Dawson	3892	4-4-0	ML 8	920
135	W. F. Hallstead	3895	4-4-0	ML 9	458
100	Ajax	3898	2-8-0		705
109	Hector	3900	2-8-0	Buff. 113 ML 156	735
122	Milo	3901	2-8-0		701
124	Achilles	3902	2-8-0		703
130	Goliath	3911	2-8-0		734
12	Garrett Bogart	3903	2-6-0	ML 106	388
2	W. K. Niver	3904	2-6-0	SBNY 2	218
15	W. H. Christman	3905	2-6-0	ML 143	367
19	R. F. Mix	3906	2-6-0	SBNY 9	201
25	James Buchanan	3908	2-6-0	SBNY 8	389
47	Robert McKenna	3909	2-6-0		202
48	Fred H. Gibbens	3916	2-6-0		371
49	Fred F. Chambers	3917	2-6-0		223
50	R. G. Rolston	3922	2-6-0		233
62	Thomas Thatcher	3923	2-6-0		372

MAIN LINE LOCOMOTIVES IN SERVICE DECEMBER 31st, 1880

No.	Name	Type	Builder	Date		In 1899 To
1	Joseph Slocum	2-6-0			From O. C. & A. 1870	
2	Ithaca	2-6-0	Dickson 186	1879	To 26; To Cay. Div.	346
3	Abington	2-6-0	Dickson 187	1879	To 28	349
4	Constitution	4-4-0	RK & G	1851	To G. Bogart	467
5	Buffalo	4-6-0	RK & G 330	1852	To 37	369
6	Niagara	4-6-0	RK & G 327	1852	To 60	408
7	W. E. Dodge	4-4-0			From O. & M. Sc. 1898	
8	Ontario	4-6-0	RK & G 323	1852	To 66	224
9	Capouse	0-6-0	Dickson 47	1869	To 88	54
10	Keystone	4-6-0	Swinburne	1852	To 89	391
11	Anthracite	4-6-0	D. C. & Co.	1854	To 94	241
12	G. Bogart	2-6-0	Baldwin 3903	1876	To 106	388
13	Lackawanna	2-6-0	Dickson 150	1874	To 109	392
14	Tobyhanna	4-6-0	Z. Colburn	1854	To 127	249
15	Wm. H. Christman	2-6-0	Baldwin 3905	1876	To 143	367
16	Carbon	2-6-0	Dickson 188	1879	To 144	347
17	Lehigh	4-6-0	Z. Colburn	1855	To 147	238
18	Samson	0-6-0	D. C. & Co.	1855		49
19	Wilkes Barre	2-6-0	Dickson 189	1879		348
20	Hampton	0-4-0	Dickson 98	1872	To Utica Div. Sc. 1898	
21	Hercules	0-6-0	D. C. & Co.	1855	Wrecked 1899	
22	Moosic	0-6-0	D. C. & Co.	1855		50
23	Kittatinny	2-6-0	Dickson		From D&H 1875	402
24	Delaware	4-6-0	D. C. & Co.	1856		239
25	Lawrence Turnure	2-6-0	Dickson 110	1872	From M&E 1879	240
26	Analomink	4-6-0	RK & G 658	1856	To Buff. Div.	393
27	Mehoopany	4-6-0	RK & G	1856		409
28	Pennsylvania	4-6-0	NJLW	1856	To Buff. Div.	
29	Aquanshicola	4-6-0	RK & G 667	1856	Sold 1899	
30	Meenesink	2-6-0	Dickson 149	1874		212
31	Open					
32	Drake Mills	4-6-0	D. C. & Co.	1862		232
33	Pohatcong	2-8-0	D. C. & Co.	1879		732
34	Pocono	2-8-0	Baldwin	1872	From S&B 1879	745

No.		Type	Builder	Date		In 1899 To
35	Ohio	0-6-0	D. C. & Co.	1856		51
36	General Grant	4-6-0	NJLW	1856	Wrecked 1899	
37	California	4-6-0	NJLW	1856	To Buff Div. Sc. 1899	
38	Oakland	4-6-0	Dickson No. 1	1863		370
39	Open					
40	Meshoppen	2-8-0	D. C. & Co.	1879		733
41	Nay Aug	2-8-0	D. C. & Co.	1879		704
42	George Bulkley	4-6-0	D. C. & Co.	1862		261
43	Ira Tripp	4-6-0	D. C. & Co.	1856		206
44	Wyalusing	4-6-0	D. C. & Co.	1853		403
45	Choconut	2-6-0	R K & G 694	1856	Reb. Scranton 1874	257
46	Chas. Marshall	2-6-0	Dickson No. 2	1863		219
47	Robert McKenna	2-6-0	Baldwin 3909	1876		202
48	Fred Gibbons	2-6-0	Baldwin 3916	1876		371
49	Fred F. Chambers	2-6-0	Baldwin 3917	1876		223
50	R. G. Rolston	2-6-0	Baldwin 3922	1876		233
51	Frugality	0-6-0	D. C. & Co.	1856		52
52	Water Gap	0-6-0	D. C. & Co.	1856		45
53	Roaring Brook	2-8-0	D. C. & Co. 1088	1879		702
54	Wind Gap	0-6-0	D. C. & Co.	1856		47
55	Open					
56	James Brown	4-6-0	D. C. & Co.	1859		268
57	Samuel Sloan	4-4-0	D. C. & Co.	1857	To M&E Div.	435
58	Investigator	4-6-0	D. C. & Co.	1857		391
59	Decision	4-6-0	D. C. & Co.	1857		169
60	Colonel Scranton	4-4-0	D. C. & Co.	1857	To 1	466
61	Stroudsburg	2-6-0	Scranton Shp.	1872	To Bloom Div.	264
62	Thomas Thatcher	2-6-0	Baldwin 3923	1876		372
63	Monocanock	4-6-0	D. C. & Co.	1857		258
64	C. R. Roberts	4-6-0	D. C. & Co.	1857		373
65	W. S. Wetmore	4-6-0	D. C. & Co.	1857		214
66	John Brisbin	4-4-0	Taunton 233	1859	To 3	420
67	General Sherman	4-6-0	D. C. & Co.	1859		234
68	John E. Williams	4-6-0	D. C. & Co.	1859		245
69	John I. Blair	4-6-0	D. C. & Co.	1859		246
70	General Sheridan	4-6-0	D. C. & Co.	1859		203
71	Geo. N. Miller	4-6-0	D. C. & Co.	1859		374
72	Montrose	0-6-0	D. C. & Co.	1861		53
73	Southport	4-6-0	D. C. & Co.	1861		375
74	Henry Young	4-6-0	Dickson No. 3	1863		225
75	Union	4-6-0	Dickson No. 5	1864		376
76	S. B. Chittenden	4-6-0	Dickson No. 6	1864		204
77	R. R. Graves	4-6-0	Dickson No. 8	1864		215
78	Chas. Danforth	4-6-0	D. C. & Co.	1865		404
79	J. J. Albright	4-6-0	Dickson No. 14	1865		235
80	Dan S. Dickinson	4-6-0	Dickson No. 15	1865		377
81	Lowell Holbrook	4-6-0	D. C. & Co.	1865		378
82	Watts Cooke	4-6-0	D. C. & Co.	1865		226
83	Percy R. Pyne	4-6-0	D. C. & Co.	1865		379
84	George Bliss	4-6-0	D. C. & Co.	1865		205
85	A. J. Odell	4-6-0	D. C. & Co.	1865	To Buff. Div.	365
86	James Archbald	4-6-0	Dickson No. 16	1865		380
87	Hyde Park	0-6-0	Dickson No. 99	1872	scrap 1899	
88	Moses Taylor	4-4-0	D. C. & Co.	1865	To M&E Div.	472
89	B. H. Throop	4-4-0	From O. C. & A.		To 5	144
90	Ed. Minturn	4-6-0	D. C. & Co.	1866	To Buff. Div.	
91	J. H. Scranton	4-6-0	D. C. & Co.	1866		382
92	Gov. Curtin	4-6-0	D. C. & Co.	1866		383
93	Gov. Geary	4-6-0	D. C. & Co.	1866		216

In 1899
To
51

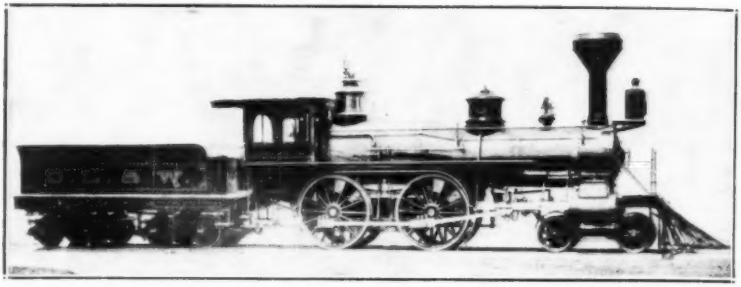
370

733
704
261
206
403
257
219
202
371
223
233
52
45
702
47

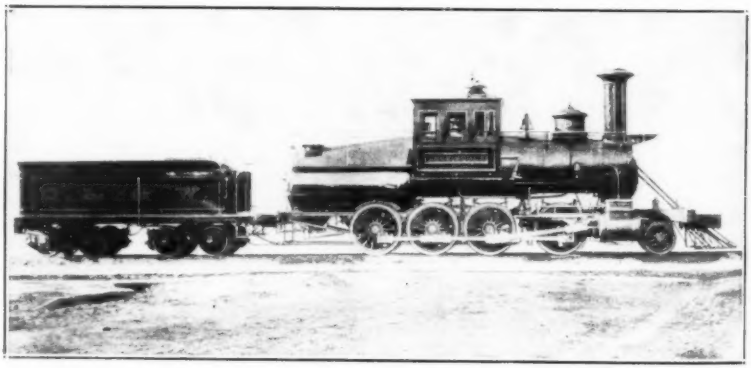
268
435
391
169
466
264
372
258
373
214
420
234
245
246
203
374
53
375
225
376
204
215
404
235
377
378
226
379
205
365
380

472
144

382
383
216



D. L. & W. "Moses Taylor" #88. Re. 472.—Danforth,Cooke & Co.. 1865.



D. L. & W. "Archimedes" #139. Re. 731.—Cooke. 1880.

No.		Type	Builder	Date		In 1899 To
94	Gov. Packer	4-6-0	D. C. & Co.	1866		354
95	Gen'l. Kearney	4-6-0	Dickson No. 21	1867		384
96	Gen'l. Meade	4-6-0	Dickson No. 22	1867		385
97	Gen'l. Burnside	4-6-0	Dickson No. 23	1867		217
98	Continental	0-6-0	D. C. & Co.	1867		55
99	Diamond	0-6-0	D. C. & Co.	1867		56
100	Ajax	2-8-0	Baldwin 3898	1876		705
101	Vulcan	2-8-0	Cooke	1880		727
102	New York	4-6-0	Scranton Shp.	1869		350
103	Isaac Bell	4-6-0	D. C. & Co.	1868		386
104	J. J. Astor	4-6-0	D. C. & Co.	1869		387
105	Geo. F. Tolman	4-6-0	D. C. & Co.	1869	sold 1899	
106	Moses H. Grinnell	4-6-0	D. C. & Co.	1869	to Buff Div.	363
107	P. H. Vandervoort	4-6-0	D. C. & Co.	1869		351
108	Robert S. Hone	4-6-0	D. C. & Co.	1869		352
109	Hector	2-8-0	Baldwin 3900	1876		735
110	Denning Duer	4-6-0	D. C. & Co.	1870		229
111	Susquehanna	4-6-0	D. C. & Co.	1870		267
112	G. W. B. Cushing	4-6-0	D. C. & Co.	1870		357
113	W. R. Storrs	4-6-0	D. C. & Co.	1870		272
114	Oswego	4-6-0	D. C. & Co.	1870		353
115	Binghamton	4-6-0	D. C. & Co.	1870		356
116	E. R. Holden	2-6-0	D. C. & Co.	1870		358
117	Pequest	2-6-0	D. C. & Co.	1870		359
118	James Blair	2-6-0	D. C. & Co.	1870		360
119	Wm. B. Phelps	2-6-0	D. C. & Co.	1870		362
120	J. C. Platt	2-6-0	Dickson No. 61	1870		222
121	Wm. Walter Phelps	2-6-0	Dickson No. 62	1870		364
122	Milo	2-8-0	Baldwin 3901	1876		701
123	Daniel James	2-6-0	Dickson No. 64	1870		231
124	Achilles	2-8-0	Baldwin 3902	1876		703
125	Oxford	2-6-0	Dickson No. 66	1871	to Bloom Div.	253
126	Bellevue	0-6-0	Dickson No. 100	1871		57
127	Thomas Dickson	4-4-0	Scranton Shops	1871	to 6	455
128	John Steward	2-6-0	Dickson No. 73	1871	to Bloom. Div.	368
129	City Bank	2-6-0	Dickson No. 74	1871		366
130	Goliath	2-8-0	Baldwin 3911	1876		734
131	William Henry	2-6-0	Dickson No. 148	1873		209
132	Moscow	2-6-0	Dickson No. 151	1874		210
133	Portland	2-6-0	Dickson No. 152	1874		221
134	Walter Dawson	4-4-0	Baldwin 3892	1876	to 8	920
135	W. F. Hallstead	4-4-0	Baldwin 3895	1876	to 9	458
136	Trajan	2-8-0	Cooke 1141	1880		728
137	Jason	2-8-0	Cooke 1142	1880		729
138	Hannibal	2-8-0	Cooke 1143	1880		730
139	Archimedes	2-8-0	Cooke 1144	1880		731
140	Nicholson	2-6-0	Dickson 253	1880	to Buff Div.	330
141	Factoryville	2-6-0	Dickson 254	1880	to Bloom Div.	344
142	Dalton	2-6-0	Dickson 255	1880	to Bloom Div.	345
143	Spragueville	2-6-0	Dickson 256	1880	to Buff. Div.	343
144	Bridgeville	2-6-0	Dickson 257	1880	to Buff. Div.	336

MORRIS & ESSEX DIVISION ENGINES IN SERVICE DEC. 31st, 1880

1	Orange	2-6-0	D. C. & Co.	1866	262
2	Dover	2-6-0	D. C. & Co.	1866	250
3	Milburn	2-6-0	D. C. & Co.	1866	270
4	Rockaway	2-6-0	D. C. & Co.	1866	265
5	Warren	2-6-0	D. C. & Co.	1866	271

No.	Name	Type	Builder	Date		In 1899 To
6	Essex	2-6-0	Rhode Is'd	1868		165
7	Chatham	2-6-0	D. C. & Co.	1866		273
8	Delaware	2-6-0	Rhode Is'd	1868	Sold 1899	
9	Passaic	2-6-0	Norris-Son	1868		164
10	Pequest	2-6-0	Norris-Son	1868	Sold 1899	
11	Montrose	4-4-0	Rogers	1868		136
12	Pohatcong	4-4-0	D. C. & Co.	1858	scrap 1889	
13	Newark	4-4-0	D. C. & Co.	1864	scrap 1896	
14	Hoboken	4-4-0	D. C. & Co.	1864	scrap 1883	
15	Lehigh	4-4-0	D. C. & Co.	1864		418
16	Stanhope	4-4-0	N. J. L. Wks	1864	scrap 1892	
17	Hackensack	4-4-0	D. C. & Co.	1865		111
18	Whippany	4-4-0	D. C. & Co.	1865	ren E. S. Auchincloss	118
19	Pompton	4-4-0	D. C. & Co.	1865		117
20	Philipsburg	4-4-0	D. C. & Co.	1865		125
21	Watsessing	4-4-0	D. C. & Co.	1865		129
22	Boonton	4-4-0	D. C. & Co.	1865	scrap 1895	
23	Easton	4-4-0	D. C. & Co.	1864	scrap 1882	
24	Madison	4-4-0	D. C. & Co.	1864	sold 1879 B. & P. No. 1	
25	Morris	4-4-0	D. C. & Co.	1864	sold 1881 R. W. & O.	
26	Sussex	4-4-0	D. C. & Co.	1864	scrap 1889	
27	Waterloo	4-4-0	Portland	1864	scrap 1894	
28	New Jersey	4-4-0	Portland	1864		107
29	Senecawanna	4-4-0	D. C. & Co.	1866	scrap 1889	
30	Loantaka	4-4-0	D. C. & Co.	1866	scrap 1892	
31	Summit	4-4-0	D. C. & Co.	1865		110
32	Washington	4-4-0	D. C. & Co.	1865	sold 1899	
33	Wallkill	4-4-0	D. C. & Co.	1865		112
34	Raritan	4-4-0	D. C. & Co.	1865		114
35	Paulinskill	4-4-0	D. C. & Co.	1865		119
36	Pequannock	4-4-0	D. C. & Co.	1865		113
37	Oxford	4-4-0	D. C. & Co.	1866	ren. Roseville	116
38	Ringwood	4-4-0	D. C. & Co.	1866		115
39	Hudson	4-4-0	D. C. & Co.	1866	sold 1881 R. W. & O.	
40	Musconetcong	4-4-0	D. C. & Co.	1866		446
41	Verona	0-6-0	Norris-Son	1866	scrap 1887	
42	Ida	0-6-0	D. C. & Co.	1866		24
43	Eva	0-6-0	D. C. & Co.	1866		9
44	Ella	0-6-0	D. C. & Co.	1867		6
45	May	0-6-0	D. C. & Co.	1867		25
46	Syngack	2-6-0	N. J. L. Wks	1866		397
47	Mansfield	2-6-0	N. J. L. Wks	1866		398
48	Franklin	2-6-0	N. J. L. Wks	1866		399
49	Greenwich	2-6-0	N. J. L. Wks	1866		401
50	Union	2-6-0	N. J. L. Wks	1866	sold 1899	
51	Jennie	0-4-0	Rhode Is'd	1866	scrap 1892	
52	Chester	2-6-0	Rogers	1868		161
53	Broadway	2-6-0	Rogers	1868		163
54	Montclair	2-6-0	Rogers	1868		162
55	Independence	2-6-0	Rogers	1868		160
56	Dynamis	2-8-0	Baldwin	1867		740
57	Bloomfield	4-4-0	N. J. L. Wks	1858	From N. & B. scrap 1887	
58	Economy	2-8-0	Baldwin	1868		741
59	Denville	4-6-0	Baldwin	1868	sold 1899	
60	Troy	4-6-0	Baldwin	1868		395
61	Caldwell	4-6-0	Baldwin	1868	scrap 1898	
62	Paterson	2-6-0	D. C. & Co.	1868		230
63	Little Falls	2-6-0	D. C. & Co.	1868		396
64	Weehauken	4-4-0	O. J. Norris	1868	ren. A. Reasoner	447

In 1899
To
165
273

164

136

418

111
118
117
125
129

1

107

110

112
114
119
113
116
115

446

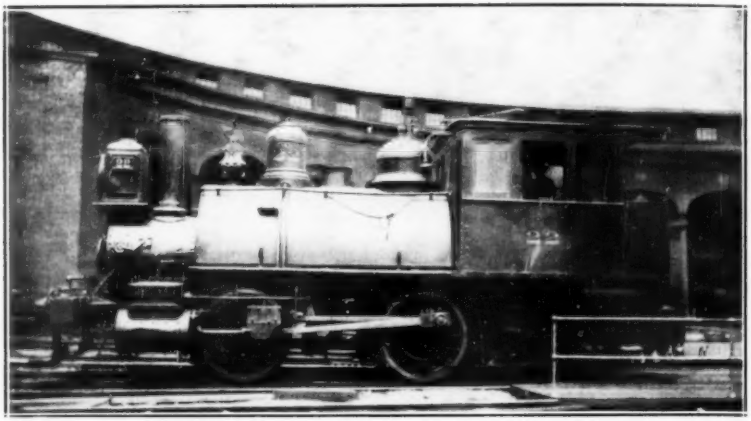
24
9
6
25
397
398
399
401

161
163
162
160
740

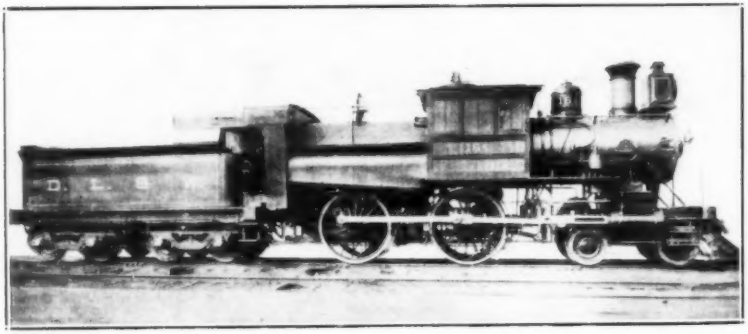
1887
741

395

230
396
447



D. L. & W. #22. Ex "Elizabethport" #100.—Danforth, Cooke & Co., 1867.



D. L. & W. (M. & E. Div.) #164. Re. 915.—Dickson, 1896.

No.	Name	Type	Builder	Date		In 1899 To
65	Port Oram	4-4-0	P. O. Fdry Co.	1868	scrap 1887	
66	Atlantic	2-8-0	Baldwin	1869	sold 1899	
67	Wawayanda	2-8-0	Baldwin	1869	scrap 1898	
68	Watchung	2-6-0	D. C. & Co.	1869		266
69	New York	2-6-0	D. C. & Co.	1869		394
70	B. G. Clarke	2-6-0	Dickson No. 35	1868		62
71	New Providence	2-6-0	Dickson No. 40	1869		255
72	Bergen	2-6-0	Dickson No. 41	1869		227
73	Succasunna	2-6-0	Dickson No. 42	1869		263
74	Grace	0-6-0	D. C. & Co.	1869		7
75	Secaucus	4-4-0	D. C. & Co.	1869	reb. Engine A	126
76	Sam. Schock	2-6-0	D. C. & Co.	1870		64
77	A. Reasoner	2-6-0	D. C. & Co.	1870	ren. Weehauken	66
78	Jos. Scranton	0-4-0	D. C. & Co.	1870	scrap 1892	
79	Luke F. Tronson	2-6-0	D. C. & Co.	1870	scrap 1898	
80	Berkshire	2-6-0	D. C. & Co.	1870		228
81	Papakating	4-4-0	D. C. & Co.	1870		131
82	Speedwell	4-4-0	D. C. & Co.	1870		132
83	Delawanna	4-4-0			scrap 1893	
84	Kingsland	4-4-0			scrap 1886	
85	D. B. Goodwin	4-4-0	Schenectady	1867	From Utica Div. 1874	137
86	Harrison	4-4-0	From O. & M.			436
87	John J. Phelps	4-4-0	D. C. & Co.	1865	From DL&W 1871	419
88	Vulcan	4-4-0	D. C. & Co. No. 1019	1876		437
89	J. B. Ontivia	4-4-0	D. C. & Co. No. 729	1871		140
90	C. E. Carryl	4-4-0	D. C. & Co. No. 730	1871		135
91	G. W. Chadwick	4-4-0	Schenectady	1869	From Utica Div. 1874	
92	W. E. Dodge	2-6-0	Dickson No. 45	1869	From Utica Div. 1874	220
93	Percy R. Pyne	2-6-0	Dickson No. 57	1870	From Utica Div. 1874	256
94	Totawa	4-4-0			From O. & M. 1871	127
95	Willie Sloan	2-6-0	D. C. & Co. No. 765	1872		10
96	Morristown	2-6-0	Dickson No. 108	1872		251
97	Pavonia	2-6-0	Dickson No. 97	1872		213
98	E. S. Auchincloss	2-6-0	Dickson No. 109	1872	ren. Whippany	252
99	Wm. Buchanan	2-6-0	Dickson No. 111	1872		237
100	Centennial	4-4-0	Dickson No. 183	1876		128
101	Roseville	2-6-0	Dickson No. 112	1873	ren. Oxford	243
102	F. B. Gowan	2-6-0	Dickson No. 113	1873		244
103	Fairfield Osborne	2-6-0	Dickson No. 124	1873		61
104	Harry W. Beebe	2-6-0	Dickson No. 125	1873		59
105	Samuel Hoyt	2-6-0	Dickson No. 95	1872	From Utica Div. 1874	248
106	A. J. Williams	4-4-0	Schenectady	1868	From Utica Div. 1874	138
107	Devillo White	4-4-0	Schenectady	1868	From Utica Div. 1874	139
108	R. C. Rolston	4-4-0	Dickson No. 163	1875		130
109	Charles Danforth	4-4-0	Cooke No. 1011	1875		133
110	John Cooke	4-4-0	Cooke No. 1012	1875		134
111	Edith	2-6-0	Cooke No. 1008	1875		58

No. 85 renamed Samuel Sloan.
No. 91 renamed Wm. H. Lewis
No. 106 renamed Moses Taylor.
No. 107 renamed Wm. Walter Phelps.

New York's Oldest Ferry

By L. B. N. Gnaedinger

NEW YORK CITY's oldest utility celebrated its 164th anniversary this last May. The Hoboken Ferry, established the year before the Revolution and now part of the Lackawanna Railroad, carried the soldiers of both sides in the Revolutionary War and ferried United States soldiers on their way to enlist with Commodore Perry in the War of 1812. Now its boats carry about 25,000,000 persons yearly. The boats used in the service were originally moved by horse treadmill. The latest to be put in service have 1600 horsepower.

The Hoboken ferry was established early in 1775 to connect the corporation dock at Bear Market, in New York City, with what is now Hoboken, but which was then a small town with one hotel. This was the Kings Arms Inn, which was owned by Cornelius Haring, who also operated a stage from Hoboken to Paterson by way of the Plank Road.

The ferry was hardly in operation the following year when it was commandeered by the British forces in New York. The organization of the new ferry was made known in an announcement by Cornelius Haring which contains one of the longest sentences in English. The announcement read:

"CORNELIUS HARING begs leave to present his most respectful compliments to the Public and to inform them he intends on Monday, the first of May, next, to open the established ferry from the remarkable pleasant and convenient place of William Bayard, Esq., at Kings Arms Inn, from which place all gentlemen travelers and others who have occasion to cross that ferry will be accommodated with the best of boats of every kind suitable to the wind and weather to convey them from thence to New York Market near corporation pier at the North River opposite Vesey Street, at which place a suitable house will be kept for the reception of travelers passing to and from his house, and will have his boats in good order, and his boats will always be ready to attend to travelers and ladies and gentlemen coming from the City of New York as well as those of the province he lives in at a minute's notice, and ladies who are going to any part of New Jersey, Philadelphia or the Northern country and choose to have their horse and carriage brought over that night and set out early the next morning, or such as are coming from Philadelphia or elsewhere that choose to stay at the Inn that night and the next morning go over to the City of New York. He has one of the best wharfs for landing horses and carriages at all times of the tide. The boats are to be distinguished by the name Hoobook Ferry painted on the stern."

John Allen obtained a lease on the ferry in 1784 at £67 a year, but, finding the terms onerous, he obtained release from the contract. There were several changes in lessees until, in 1879, John Stevens, of Hoboken, obtained the concession for £10 annually, this being the highest bid. He held the lease until 1791.

In that year the Common Council of New York established rates for the ferry under the following classifications: Passenger; coach, chariot or covered wagon; sleigh, sheep, calf or hog; bushel of salt; hogshead of wine or molasses; barrel of beef, flour or fish; basket of fruit; bag of grain; bale of cotton, and "cabbage per 100."

In 1809 John Stevens announced himself as the first man in the United States to have successfully applied steam as a propelling power. In fact, his invention of a locomotive, which moved on a circular track in his garden, was recently celebrated in Hoboken. By 1811 Stevens had constructed a steam ferry, known as the *Julianna*, that carried 100 passengers at a trip. However, the steam ferry appears to have been unsatisfactory, for it was soon abandoned, and the use of horses walking on a treadmill was resumed.

Stevens sold his lease in 1817 to John Robert and Samuel Stoutworth, the Common Council giving its consent and extending the lease for ten years on condition that Mr. Stoutworth should pay the City of New York $516.25 yearly and that he should within six months put in service two boats operated by not less than eight horses.

About this time the landing on the New York side was changed to Murray Street. This was found too remote from the market, and the landing was changed to the present site at Barclay Street on June 8, 1818.

The Hoboken Steamboat Ferry Company was incorporated in 1821. Thereafter the steam ferry *Hoboken* made trips "every hour by St. Paul's Church clock." The Christopher Street ferry was started in 1836. The ferry from Fourteenth Street, Hoboken, to Fourteenth Street, New York, was opened in 1886. In 1904 its New York landing was changed to Twenty-third Street.

The *Lackawanna,* built by Ward, Stanton & Co., of Newburgh, in 1881, was the first steel-hull ferry to be constructed. The sister ferries *Hamburg* and *Bremen* were built in 1881 by Thomas S. Marvelin & Co.

The Hoboken ferry was acquired by the Lackawanna Railroad in 1903. Captain John M. Emery was appointed superintendent of the company and of the railroad's marine department in 1905, and continues in that position today. The road now operates the largest fleet of ferries in New York Harbor. They cross the Hudson 810 times every twenty-four hours and carry thousands of vehicles annually.

The Unadilla Valley Railway

By William Conrad Kessler

THE Unadilla Valley Railway is certainly not one of the most important railroad systems in the country nor even in New York State. Yet, it holds something of interest to the railroad enthusiast because of its long record of independence and continued existence, despite its short length and small possibilities for developing traffic. It is a line twenty miles long located in upstate New York, extending in a north-south direction from Bridgewater on the Lackawanna to New Berlin where it connects with the Edmeston branch of the New York, Ontario and Western which in turn gives it a line to New York City. The Lackawanna connection at Bridgewater is the Richfield Springs line of that company and it joins the Utica division, giving a connection to that city, thirteen miles away. New Berlin, the most important village in the valley, has a population of 1,076 and is a feed and shipping center for the most important industry of the locality—dairying. At present and, in fact, for all the years of its existence, the economic significance of the railroad to the surrounding country consists in bringing in western feed for the dairy cows and fuel for the pasteurizing and cheese plants. The outbound traffic is made up almost entirely of milk and cheese for the New York market. In earlier years lumber shipments were of some importance but they have declined with the cutting down of the forests.

The equipment of the U. V. consists of three locomotives and four freight cars. The locomotives include one of the original engines, a Rhode Islander purchased in 1895 and still used in emergencies. In its youth it was known as "Merlyn" but now it bears no name and is known only as Number One. It is a 4-4-0 type. The other two are Baldwins 2-6-2 and were bought about 1918. A total of 31 persons are employed. The local freight makes two round trips a day, at 4:30 a. m. and 2 p. m.

The little U. V. is not too strong financially these days but such a condition is no longer exceptional among American railroads. It has seen happier days, as can be seen from the following table which shows the net income after operating expenses, taxes and bond interest obtained by the company from the date of the first full year's operation (1895) to 1937:

NET INCOME, UNADILLA VALLEY RAILWAY, 1895-1937

Year		Net Income
1896 (year ending June 30)	Loss	$10,978.14
1897 (year ending June 30)	Loss	11,327.67
1898 (year ending June 30)	Not available	
1899 (year ending June 30)	Loss	5,246.11
1900 (year ending June 30)	Loss	10,925.55
1901 (year ending June 30)	Loss	19,318.95
1902 (year ending June 30)	Loss	5,764.67
1903 (year ending June 30)	Profit	1,838.38
1904 (year ending June 30)	Profit	3,016.28
1905 (year ending June 30)	Profit	9,186.54

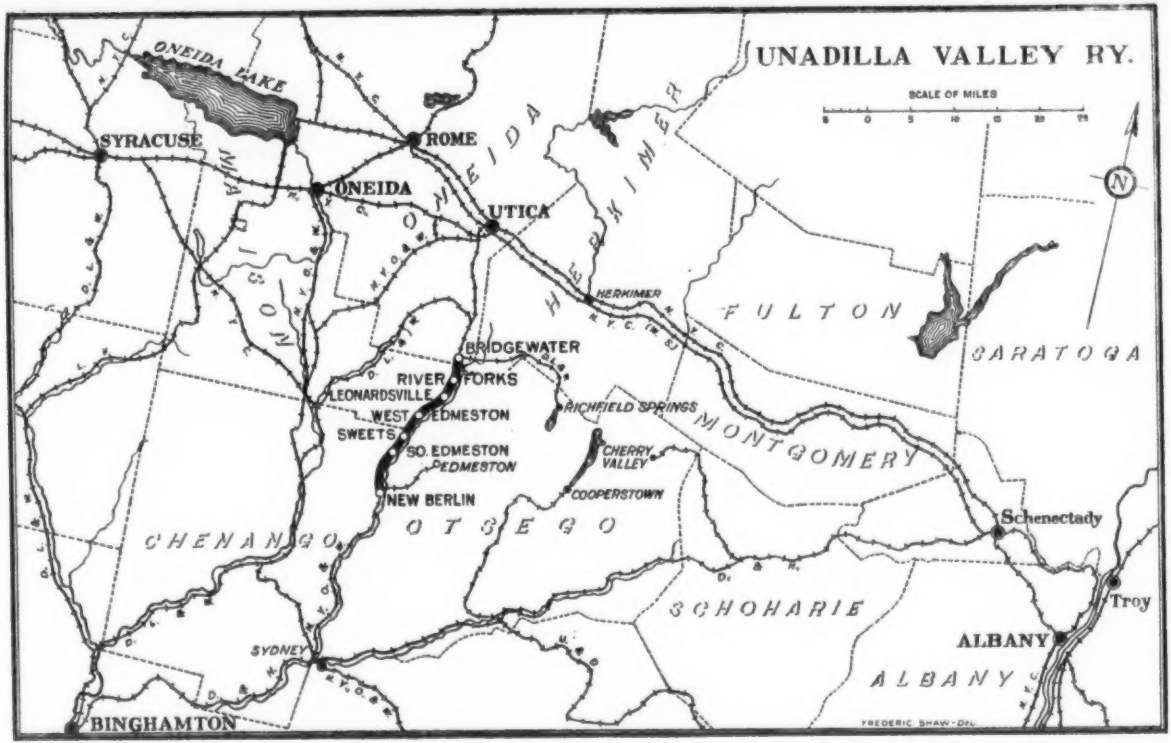
1906 (year ending June 30)	Profit	6,985.33
1907 (year ending June 30)	Profit	10,178.00
1908 (year ending June 30)	Profit	4,854.00
1909 (year ending June 30)	Profit	3,996.00
1910 (year ending June 30)	Profit	7,636.00
1911 (year ending June 30)	Profit	5,207.00
1912 (year ending June 30)	Profit	5,559.00
1913 (year ending June 30)	Loss	1,202.00
1914 (year ending June 30)	Profit	7,228.00
1915 (year ending June 30)	Profit	1,195.00
1916 (year ending June 30)	Profit	1,347.00
1917 (year ending December 31)	Loss	1,433.00
1918 (year ending December 31)	Loss	845.00
1919 (year ending December 31)	Profit	3,990.00
1920 (year ending December 31)	Loss	2,416.00
1921 (year ending December 31)	Profit	2,993.00
1922 (year ending December 31)	Profit	15,097.00
1923 (year ending December 31)	Profit	8,604.00
1924 (year ending December 31)	Loss	20,760.00
1925 (year ending December 31)	Profit	5,748.00
1926 (year ending December 31)	Profit	1,916.00
1927 (year ending December 31)	Profit	4,619.00
1928 (year ending December 31)	Profit	7,347.00
1929 (year ending December 31)	Profit	26,372.00
1930 (year ending December 31)	Loss	1,408.00
1931 (year ending December 31)	Profit	3,083.00
1932 (year ending December 31)	Loss	5,591.00
1933 (year ending December 31)	Loss	12,552.00
1934 (year ending December 31)	Loss	8,180.00
1935 (year ending December 31)	Loss	9,312.00
1936 (year ending December 31)	Loss	8,246.00
1937 (year ending December 31)	Loss	19,932.00

(Sources: Annual Reports, New York Railroad Commissioners. Statistics of Railways in the U. S. Interstate Commerce Comm.)

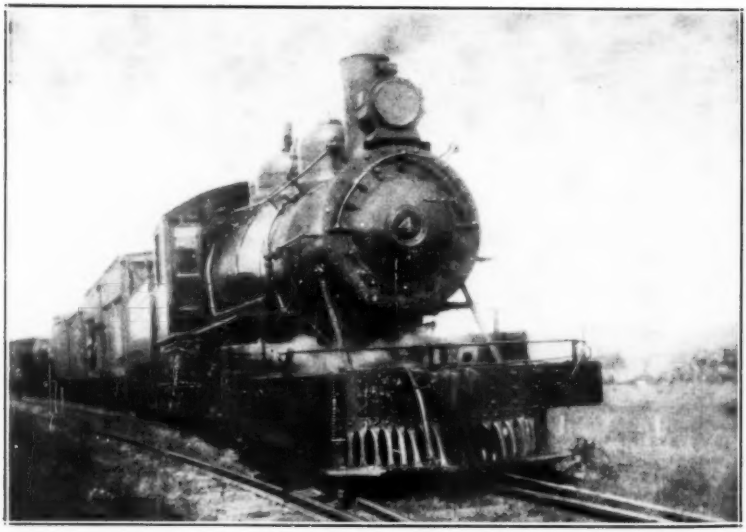
It can be seen that operations were fairly profitable from 1903 to the war period but great fluctuations in the earnings were introduced after 1917. A record high of $26,372 was earned in 1929 but this was succeeded by an almost unbroken series of deficits down to the present. There is, however, a bright spot in the picture, as explained in the excellent article in the August number of Fortune Magazine on this road. This is the fact that a large portion of the fixed interest charges have become nominal because of an agreement with the largest creditor, the estate of Mr. Morris, former president.

Since February of this year the little railroad has been in the hands of the H. E. Salzberg Company which is said to be a specialist in the operation (and sometimes scrapping) of light railways. Thus far, the company has chosen to run the U. V.

In the case of all American railroads, it is interesting for the researcher to delve into the reasons which explain why the lines were ever built, let alone how they manage to exist at present. It is well known that many American lines came into existence in a very haphazard manner thru the competition of cities and towns for transportation facilities and the desire of individuals to profit thru their construction, either as promoters or as land speculators. How did the twenty-mile Unadilla Valley originate?


UNADILLA VALLEY RY.
SCALE OF MILES
ONEIDA LAKE
SYRACUSE
ROME
ONEIDA
UTICA
HERKIMER
ONEIDA
HERKIMER
FULTON
SARATOGA
BRIDGEWATER
RIVER FORKS
LEONARDSVILLE
WEST EDMESTON
SWEETS
SO. EDMESTON
EDMESTON
NEW BERLIN
RICHFIELD SPRINGS
CHERRY VALLEY
COOPERSTOWN
MONTGOMERY
CHENANGO
OTSEGO
SCHOHARIE
Schenectady
Troy
ALBANY
ALBANY
SYDNEY
BINGHAMTON
FREDERIC SHAW - DEL.

U. V. #1 "Merlyn."—Rhode Island.



U. V. #4—Baldwin

There was almost always some desire to link up the Unadilla Valley with its bigger neighbor to the north, the Mohawk. After the successful construction of the Erie Canal a movement was started to stimulate the building of various feeder canals and, naturally, the people of the Unadilla hoped to see such a canal come their way. Such hopes, however, were shattered by the death of Governor Clinton and the construction of a canal thru a competing valley—the Chenango—in 1833. It was not until 1899 that a railroad company was incorporated to build a line connecting Utica with the Valley. This was the Utica and Unadilla Valley Railroad. All this time the people had to depend either upon wagon roads or upon a rail connection by way of the Oswego Midland (later Ontario and Western) at New Berlin via Sydney, Norwich and over the Utica, Clinton and Binghamton at Smith's Valley to Utica. This was a circuitous route about 100 miles long compared with an airline distance of only 30 miles! Such were the conveniences of travel in the nineteenth century. Unfortunately, the U. & U. V. became involved in some legal dispute and no line was ever built by it.

In 1890 the Unadilla Valley Railroad was chartered. There were certain definite reasons for its construction at this time. As the promoters were New Yorkers we may assume that they realized the importance of a line which would help tap new sources of fluid milk supply for the growing city. As far as the people of the locality were concerned, they were torn between desires to help the public good and to increase their own incomes as individuals. The line meant convenience in reaching local destinations and the city market at Utica. It also meant the rise of real estate values and the acquisition of an "unearned increment" by the landowner. Leonardsville, a town on the proposed line, would benefit in particular because it had the largest manufacturing establishment in the valley, the stove and farm machinery plant of H. D. Babcock which consumed coal and iron and sent out a heavy product. In fact, visions of the Unadilla Valley as a manufacturing center rivalling even the Mohawk Valley began to float before the eyes of the citizens. The Valley could be part of a thru line between the industries of Schenectady, Little Falls, Ilion, Utica, etc. and the Pennsylvania coal fields and New York City or Binghamton, thus absorbing much of the traffic of the neighboring Chenango. Why should not some of this coal stay right in the Unadilla and be used there by local industries? As for passenger service, Richfield Springs was at that time a thriving summer resort for New Yorkers and some of this Pullman traffic might come via New Berlin and the U. V. In fact, the Valley has some natural beauty spots of its own!

In the North, the people of Utica were also watching the progress of the project. They thought that it meant for them the acquisition of the wholesale and even some of the retail trade of the area, to the disadvantage of Norwich and Albany, where the Unadillans had been trading via Sydney.

The interests of the groups are reflected in the financial report which was given to the line. Altho the project was conceived in New

York City and has always remained in New York hands, the people of the Valley had some share in financing it. As was usual in those days, they contributed money and land for the right of way, in this case to the amount of $22,500. After much persuasion and propaganda, persons in Utica contributed $10,000 in the hopes of getting the wholesale trade, as mentioned above, and they were given income bonds for that amount and paying five per cent interest. Incidentally, the rest of the financial structure of the company consisted of $187,500 worth of 5% first mortgage gold bonds due in 1933 and 2,000 shares of common stock with a par value of $100 per share. This gave the company a fairly high refunded debt of $10,000 per mile of line.

In the fall of 1892 construction was finally started but, unknown to the promoters, a bad panic was lying in wait for them, that of 1893. For a time, in 1893, work on the road was halted and the Italian immigrant workers turned from pick and shovel work to a little cheese making, much to the interest of the local people. Many despaired of ever seeing the much longed for railroad but work was taken up again and in October, 1894, the line was put in operation from Bridgewater to West Edmeston and finally, in July, 1895, amidst a grand parade of floats and cyclists, finished off in the evening with fireworks, the line was opened to traffic for its entire length of twenty miles.

The first effects of this improvement of transportation in the Valley were interesting. There was an immediate change from the production of more or less durable dairy products like cheese to fluid milk for the New York market. Milk traffic on the line at New Berlin rose from fourteen cans on August 1, 1895 to one hundred and fifty-two on August 5 and three hundred in the beginning of September. Milk stations were established all along the line. A condensed milk plant was constructed at New Berlin on the site of a cotton mill built in 1832. Passenger traffic was also gratifying; in addition to the regular two round trips a day to Utica local excursions were run to Richfield Springs.

Nevertheless, as can be seen from the table above, the road did not make money. Times were not good, there was a substantial funded debt and maintenance costs were heavy in the severe climate of upstate New York. Apparently the officers of the company felt that the line should be expanded to a wider area in order to acquire more traffic. Like almost all other American lines, the U. V. did not lack ambition to become a bigger "system." The company was already running a stage line from New Berlin to Morris and there was some talk of a light electric railway from Leonardsville to Brookfield on the west. In 1902 surveys were made for a line from New Berlin via Morris to Oneonta (32 miles). This would have given them a shorter connection than that via the O. & W. by way of Sydney to Albany along the Albany and Susquehanna and to New York via the Ulster and Delaware. There is some evidence that such a line connecting Oneonta with Oneida and Syracuse was proposed even before the U. V. was built. Another line, apparently paralleling the existing Lackawanna line from Bridgewater to Utica (18 miles) was surveyed. Nothing came of these moves, prob-

ably because of the continued losses sustained by the line and in 1903 the Unadilla Valley Railroad was declared bankrupt. In January, 1904, it was sold at a foreclosure sale to a new Unadilla Valley Railway Company with a new president, Lewis R. Morris of New York. The income bonds were lost in the shuffle and the interest rate of the first mortgage bonds was reduced to four per cent. With this help the line began to operate in the black and its first and only reorganization was a thing of the past.

At present the line is operated for freight service only. About ten years ago passenger service was limited to a gasoline rail motor car but after a few years even this was given up. By means of low rates it manages to retain the traffic of several milk stations and one large cheese factory along the line. The Babcock factory is still in existence. The railroad is regarded with considerable affection by the local people altho not, alas, to the extent of giving it wholeheartedly their patronage. The Unadilla Valley Railroad is distinctly an agricultural road in a region where life is easy going and pleasant and where economic changes have not been too great in the last fifty years—with one exception which may prove to be its death blow: the motor car. As a local institution of interest it deserves a long life.

Sources:

Annual Reports of the New York Railroad Commissioners.
Annual Reports of the Public Service Commission of New York.
Statistics of Railways in the U. S. Interstate Commerce Commission.
New Berlin "Gazette."
Scrapbook of the Unadilla Valley Railway Company.

Various officers and employees of the railroad to whom many thanks are due.

The LaSalle Street Station, Chicago, Illinois

By Frank J. Nevins

Valuation Engineer, Chicago, Rock Island & Pacific R. R.

Paper read before the joint meeting of the Engineering Division of the Western Society of Engineers and the Chicago Chapter, Railway & Locomotive Historical Society, October 21, 1936.

It was on a cold, raw morning in October, 1851, that a number of idlers stood grouped around a vacant lot just west of Clark Street, north of Jackson, watching two men as they waded through the mud to the center of the lot and proceeded to erect a gaudily painted sign. Not one of those gathered there had ever seen a sign reading like this one:

GOOD RAILROAD WORK FOR THE WINTER
APPLY TO SHEFFIELD AND FARNUM, CONTRACTORS
THE CHICAGO AND ROCK ISLAND RAILROAD
AT 12th and CLARK STREETS.

Mike was there, and Pat; also Tony and Dominique and it was not long before they were asking two questions in one common language: "How far?" and "Where?" Thus history records the forming of the first railroad camp in Illinois—that of the Rock Island Railroad.

At 13th Street and the South Branch of the Chicago River, in the Rock Island slip, the schooner C. Y. Richmond was unloading 17,000 tons of 58 pound iron rail that had been shipped by the Ebbervale Company, from Leeds, England. Alongside the C. Y. Richmond another schooner was discharging a cargo of cedar cross ties from up Grosse Pointway or, Evanston, as we know it today.

Actual construction work of the Rock Island was started October 1, 1851 from 22nd Street or Old South Street, as it was then known, which was the southern limits of Chicago. Within a short time a force of 800 men were at work and by December of that year the graded embankment for the first railroad constructed in Illinois had reached "Five Mile Junction" or Englewood as we know it today. Regardless of the snow and chilling rain that swept across the wind-whipped stretches of prairies round about during one of the most bitter winters of that period, the track was laid as far southward as Englewood to receive the trains of the Northern Indiana Railroad (the New York Central of today). It was some time later, however, before that road was prepared to run its trains over the Rock Island into Chicago. The event was announced by President Jervis as:

"A continuation of the great lines of railroad from the southern shores of Lake Erie and Lake Michigan, coming into Chicago and using the tracks of the Rock Island Railroad, for a distance of six miles. The two roads will occupy the same depot at 22nd street . . . ."

And what a depot it was! A plain wooden structure with board and batten walls and shingle roof sixty five feet long and twenty five feet wide which enjoyed the luxury of coal-oil lamps and a clean coat of whitewash!

Some time during 1853 a new depot was erected at 12th street after the trains of both roads began running further into Chicago, although the original depot at 22nd street continued to be a shipping and passenger stop for several years after.

The general surface of the ground level at this time, between Englewood and the Chicago river was only three to four feet above the level of Lake Michigan. There was no drainage and during protracted rainfall the ground became covered with miniature lakes. The streets were poorly constructed and equally as poorly lighted. The business section of Chicago centered around the mouth of the Chicago river and access to and from the railroad station was bad at best but during wet weather the streets were almost impassible.

To cope with this situation and in response to the demands of the citizens, the City asked the railroads to extend their tracks as far north as South Water Street which would bring the traveling public much closer to the business section. The Rock Island acceded to the wishes of the City and its people and proceeded to extend its tracks northward to the south line of Jackson Street.

A temporary station was erected on the north side of VanBuren Street and three passenger tracks were laid across the latter street and across the City block which is now occupied by the Postal Telegraph and Board of Trade buildings. The United States Express Company occupied a small wooden building just north of VanBuren Street. Passenger trains not infrequently blocked the street when loading passengers and express, according to a protest voiced by the *Chicago Daily Democrat* of October 16, 1854 against the Rock Island and Northern Indiana railroads, stating: "This should not be allowed particularly on wet and rainy days because VanBuren Street is one of Chicago's newer planked thoroughfares."

This temporary railroad station was serving the public while a new depot was being erected on the site of the present LaSalle Street Station —a brick and frame structure 355 feet long exclusive of the offices at the VanBuren Street entrances. Of this building the *Chicago Herald* of October 21, 1855 stated:

"The span of the train-shed from the side-walls is 116 feet with but a single support for the entire roof, having been designed on the principle of the Howe Patent Truss which carried the weight of the roof unaided. Ventilators, to take care of the smoke from the engines are installed in the roof. The height of the side walls are 22 feet from the floor line while the height to the center of the roof arch is 42 feet. The roof alone cost $23,000."

The trains of both roads began operating from the new station December 2, 1853. An old timetable appearing in the *Chicago Tribune* of March 1, 1853, contained the following notice:

"The clock in Sherwood and Whiteley's store at the corner of Lake and Dearborn streets is at present the adopted standard time and the travelling public are reminded that the trains will arrive and depart promptly at the time stated and as indicated by that clock."

In acquiring title to several lots of this property it became necessary to purchase two lots that fronted 100 feet on VanBuren and 54

feet on LaSalle Streets, from a little church known as the "South Chicago German Society of the Methodist Episcopal Church." The lots are now occupied by the Drug-Store in the present LaSalle Station. The story goes that the little congregation were in straightened circumstances and hardly knew which way to turn for financial aid. Following two days devoted to prayer for spiritual guidance, Mr. Norman B. Judd, first General Counsel of the Rock Island approached the Trustees with an offer of $12,500 for their property. The acquisition by the Rock Island of this property was probably the swiftest on record where land was acquired by a railroad.

In 1868, business had so outgrown this structure that it was removed and a magnificent railroad station erected on the same site. It was three stories high with commodious basement, built of Joliet limestone with towers four stories high capped with Mansard roofs of pure copper. The train-shed, 186 feet wide and 400 feet long, had walls of limestone with ornamental cut pilasters. The roof of the train-shed was supported by combination wood and iron trusses which spanned completely the twelve tracks therein. This station cost $554,000. It successfully served the two roads until October 9th, 1871.

In order to better serve the travelling public the Rock Island and the Lake Shore & Michigan Southern railroads jointly interested themselves in building the Grand Pacific Hotel, a hostelry that will probably be recalled by many here this evening. It occupied the City block bounded by Clarke, LaSalle, Jackson and Quincy streets. By October 1, 1871, the great hotel—destined to be without a rival in perfection and appointment—was about ready to receive its guests when Mrs. O'Leary's cow kicked over the historical lamp in the barn on DeKoven Street and started one of the greatest conflagrations recorded by history.

The flames ate their way along the west side of the Chicago river as far as Adams Street where the conflagration swept eastward, crossed the river, flared into the very center of the business district and burned its way to Lake Michigan. This magnificent railroad station, together with 18,000 other structures were reduced to a mass of smouldering ruins. The Grand Pacific Hotel was soon engulfed by the onrushing flames and within a few hours remained only a picturesque ruin of a magnificent enterprise. Rebuilding of the Hotel began at once and on June 14, 1873, its doors were thrown open and at once drew a patronage that embraced some of our then greatest Americans. Here John B. Drake started on his career of host to the world.

A new passenger station was immediately rebuilt along the same lines of the destroyed structure. The cost was over $600,000.

The reopening of this new passenger station was the occasion of much rejoicing and Patrick A. Gilmore, leader of Gilmore's Celebrated Band, was put in charge of the grand opening which was so arranged as to commemorate the recovery of the City from the great fire. At that time Chicago did not have a coliseum sufficiently large enough to accommodate the people and the new train-shed was floored with planking and given over to the Jubilee Concerts which began on Friday, June 6, 1872 and lasted for three days.

Many speeches of thanksgiving and admonition of courage were delivered at these meetings by many of the noted men of that day. The Rock Island train-shed was often referred to in after years as the "Hall of Courage" by those who, having risen Phoenix-like from the ruins of their homes, their business and their fortunes, gathered courage from these meetings and with fortitude and reliance, went forth and retrieved their losses, began life anew and started the rebuilding of that Chicago-beautiful which we so love and admire today.

Finally, in 1899, the transportation of the railroads had so outdistanced the station facilities that it became immediately necessary to erect a passenger station more commodious in every way. It was not until May, 1901 however, that the present LaSalle Street Station was erected. It was opened to traffic on July 12th, 1903.

All told, 234 main-line and suburban trains of the Rock Island, the New York Central and the New York, Chicago & St. Louis railroads enter and depart from the train-shed of this station every twenty-four hours or, approximately one train every six minutes. This, to my mind, bespeaks a transportation feat most noteworthy and one which is probably little appreciated by the commuter or transcontinental traveler who rushes through the portals of this depot and is whisked onward toward his destination without delay. The fact that there are only ten tracks within the train-shed makes the noteworthiness of this daily feat only the more noticeable. This fact becomes more apparent when we realize that, included in this total number of trains are the "Golden State," the "20th Century", the "Rocky Mountain Limited" and the "Commodore Vanderbilt" and many similarly wonderful 12 and 14 car transcontinental trains.

In 1890, due to the continually increasing population south of 85th Street and west of Ashland Avenue, the Rock Island inaugurated a suburban service to accommodate the residents of Brainerd, Beverly Hills, Longwood, Walden, Tracy and Morgan Park. Commodious depots were erected at these suburban towns and at first, four trains were regularly operated daily to and from Chicago in this suburban service. Today, 156 Rock Island suburban trains are daily operated to serve the commuting public between Englewood and Joliet.

The New York, Chicago & St. Louis Railroad (the "Nickel Plate"), operated its passenger trains into its own depot at 12th and Clark streets until the present LaSalle Station was completed whereupon its trains came into the latter station which they have continued to do ever since.

On July 31, 1904, the Chicago & Eastern Illinois Railway, then a member of the Rock Island-Frisco-C. & E. I. empire, ran its trains into the LaSalle Station but on July 31, 1913 this tenancy ceased.

Retrospecting through the years that have seen such a lavish expenditure of engineering and operating endeavor to carry on a successful service to a travelling world, as exemplified in this history of but one unit of a great railroad, I find therein lessons to be gained from the struggles, the crushing disappointments, the achievements and successes that have marked the milestones in the existence of the Rock Island's Chicago Terminal at LaSalle and Van Buren streets.

Pacific Coast Chapter's Exhibit

By Capt. Frederic Shaw, *Vice-Chairman*

Human nature is probably at its best when kindled anew, are recollections of an earlier day, awakened by inspection of some modern reproduction of once-familiar haunts. This is brought vividly to the fore by the great majority of beholders of the "Old Depot" installed in Vacationland Building at the Golden Gate International Exposition at San Francisco this year, by the Pacific Coast Chapter of the Society.

"Oh, Dad," one so frequently hears, "doesn't this remind you of the old depot in Pikesville when we were first married back in the eighties?"

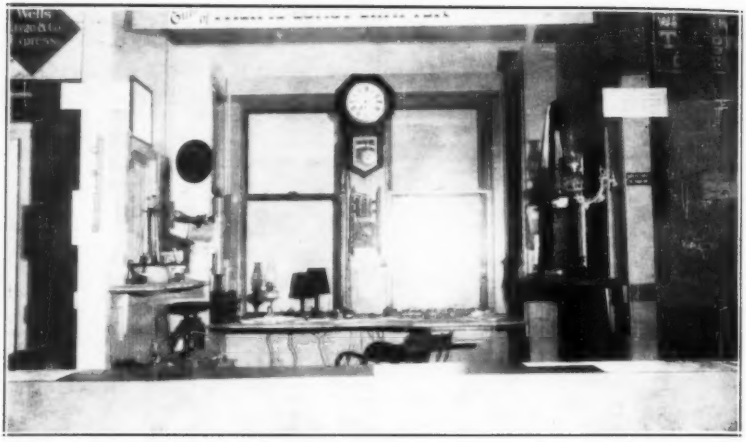
And with a chuckle, Dad replies, "Yes, Mary, it does. And do you remember how many times I sat in that partitioned bench in the depot after my weekly visit with you, waiting for the midnight train?"

And so the comments run. Folks like to reminisce about the "good old days," tell of incidents connected with the railroads and their particular home-town depot. Indeed, so well impressed have some been with the exhibit, several offers of valued railroadiana have been made, once folks understood the Society's aims.

Early in the fall of 1938, Member Harry C. Everett of the Pacific Coast Chapter, suggested to Vice-Chairman Frederic Shaw, the wish he might have a part in building a full-size replica of the old-time depot telegraph-ticket office. The idea was infectious so, Capt. Shaw being an Architect, set to work with T-square and pencil. The result was a simple but quite practical design for such an interior, to be built along the lines of stage scenery for portability, yet of much more substantial materials. Mr. Everett, being an old theatrical man, supplied the technical "stage data" necessary.

Thru the good offices of a mill-owner friend of Capt. Shaw's, the large, upper floor of the mill was made available Friday evenings and on Saturdays and the two men set to work. In about two months of effort on these weekly occasions, the thing was done and ready for a "public appearance." It had been planned to first display it in a contemplated 2nd Annual Exhibition by the Chapter in March of this year.

In the interim, "props" had to be assembled—such as telegraph instruments, wet batteries, clock, letter press, ticket case, shot-gun, kerosene lamps, corncob pipes, railroad lanterns, arm chairs and the habitual green-glass insulators on their legs, ticket stamps and punches and other things ad infinitum, including the ever-present "hard hat," that go to make up such a replica. Memory of earlier days was the only guide available. The Western Union and the Telegraph Department of the Southern Pacific Company came valiantly to the fore and supplied a dozen assorted telegraph instruments in good working order and of sufficient variety as to be complete for the need. By inquiring around in likely places, all the other things came to light or were supplied by many interested railroad friends.



Interior view of the ticket office at the San Francisco Fair, through the efforts of our Pacific Coast Chapter.

The Baggage Room, San Francisco Fair, exhibited by our Pacific Coast Chapter.

But, a week before the great Exposition opened, the management informed the then Exhibition Committee Chairman a free space was available to the Chapter for an exhibit if the members wished to avail themselves of it. A hasty canvass of membership opinion was entirely favorable; so, once again the Architect-member set to work. Faced with the problem of many promises but no material (from the Exposition) with which to build the necessary adjuncts to amplify the lone telegraph office in a space so large, the members themselves set about "locating" all the loose material on the Exposition site! And how that material finally made its mysterious appearance at the Chapter's booth the last night before the Exposition opened, is itself an epic tale! Suffice it to say, a lone carpenter began work, under the Architect's direction, at 7:30 the last evening before the Fair's opening day. At 11:30 P. M., five more joined him and at 6:30 the morning of "Opening Day," the Depot was complete—roof, sign, paint and all. But the crew went home to bed!

Consisting of three rooms—waiting room, telegraph-ticket office and baggage room, from right to left in the order named—this exhibit has attracted as much public interest as any other exhibit in the huge building and has been the Mecca for hundreds of railroad enthusiasts thruout the weeks of the Fair's running. Even Governor Culbert Olson of California, an ex-"brass pounder," was so impressed, he went in, took off his hat and coat, picked up one of the corn-cob pipes and had his photo taken at the key. Railroad men from over the country have stopped by to inspect the Depot, and many valuable suggestions have come from them. The great difficulty has been to locate some of the sorely needed "props."

What almost invariably "gets" the eye of the female beholder, is the dilapidated broom hanging on the wall by the pot-belly stove in the waiting room. By this, there is a sign which reads, "Don't use the GOOD broom on the outside platform." On the same wall on the other side of the stove, is posted a paper sign in crude lettering advertising, "The ladies of the Baptist Church Will Give a Chicken Dinner Friday Night at 6:30 o'clock. Twenty-five cents a plate." Some wag wrote on the wall beside it, "Whose chicken?"

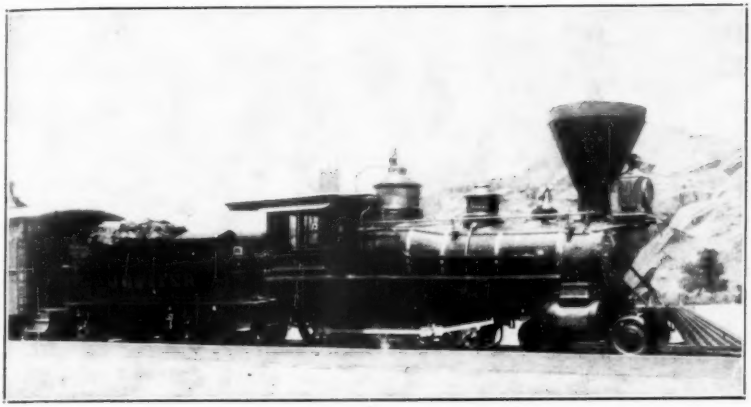
Two typical station benches, one with the cast-iron arm rests dividing it and the other minus that "bum-proofer," face one another on opposite sides of the room. A few appropriate pictures and an old show poster advertising the drama at the "Opera House" complete the scene.

The telegraph and ticket office, replete with all its paraphernalia, including the wicket windows, occupies the center space, while to the left is the baggage room. In this latter are four very old trunks of early vintage, a push-truck, oil-locker, marker and switch lamps, stand-up desk with pigeon holes and assorted rubber stamps, hand baggage and express parcels. Above the desk is a calendar for the year 1883, entirely hand made but successful in fooling everyone who has ever inspected it except one woman, who caught the single little error made in its production.

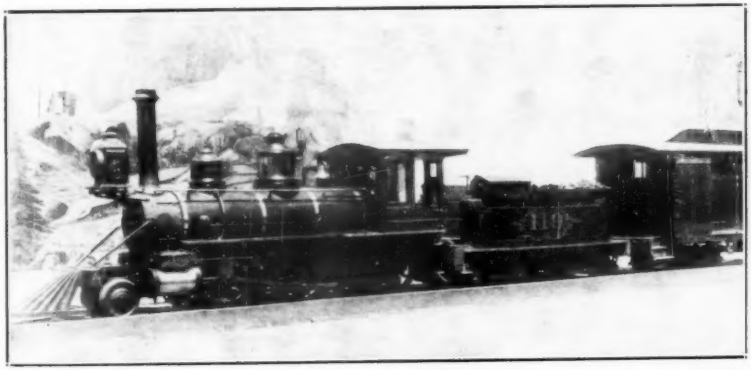
No little credit should go to Member Edward A. Vaughan, a retired Alaska sea captain, for the untiring manner in which he visited the out-of-the-way places ferreting out many needed adjuncts to make the list of props complete. His assistance has been invaluable.

Finally, a good San Francisco woman with some histrionic ability, many amateur theatrical performances to her credit and yet no membership connection whatever, was so impressed by the novelty of this exhibit, she asked permission to "doll herself up" in the habiliments of the period and appear in the waiting room as a passenger, occasionally talking to the spectators and telling them the story of the Society and what it aspires to do, with emphasis upon Chapter activities. That she does this work without remuneration and for the sheer love of the opportunity it offers for self-expression, is greatly to her credit. Our thanks are due Mrs. Barbara Williams.

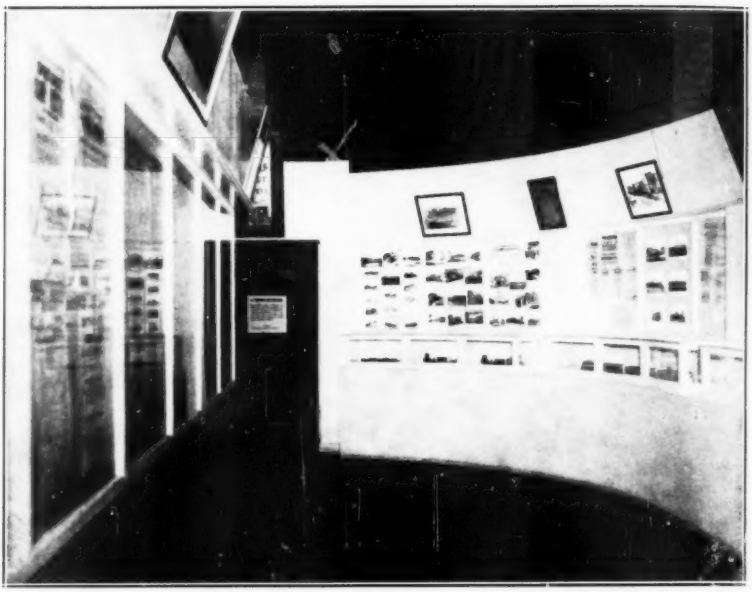
If the writer may conclude with one further comment, it may justify his verbosity. So far as known, this is the first attempt by such means, to bring the Society visibly to the public's notice, wherein an excellent opportunity has been furnished to let the outsider know of our aims. It has amply repaid all the effort expended, despite the complete lack of a budget which would have materially lightened the burden on many local purses. It is the Chapter's firm belief that, where similar opportunities may arise to get extensive public attention, the Society as a whole will profit if the matter is intelligently approached.



The "Jupiter," Ex. Nevada Central #5. Built by Baldwin, 1876 for North Pacific Coast R. R. as "Sonoma." This engine, gift to the Society by Mr. J. M. Hisky, Vice President of the Nevada Central R. R., appears in Cavalcade of America at the San Francisco Fair.



The #119, Ex Nevada Central #6. Built by Baldwin, 1879, for the Utah Northern as #13. Like the "Jupiter," the engine appears in the scene of "Driving the Last Spike" and was given this Society by Mr. Hisky.



Courtesy of Baltimore & Ohio R. R. Co.

Interior of booth showing our exhibit at N. Y. World's Fair.

Courtesy of Baltimore & Ohio R. R. Co.

Interior of booth showing our exhibit at N. Y. World's Fair.

The Society at the World's Fair

By L. B. N. Gnaedinger

The Railway and Locomotive Historical Society was remarkably well represented at the New York World's Fair last summer, with two locomotives and other historical relics on exhibit.

The locomotives were the *John W. Bowker,* a 2-4-0 type built in 1875 and salvaged from the Virginia & Truckee Railroad by members of the Pacific Coast Chapter, and a Mother Hubbard type presented by Mr. J. M. Davis, President of the Delaware, Lackawanna & Western Railroad, to the Society. Members of the New York Chapter helped to renovate this engine, which is of a type which soon will disappear from the rails.

An exhibit of old photographs, time tables, posters and new and old locomotive and car models was contained in a booth which was made available for the society through the offices of Mr. Edward Hungerford, one of our directors, who is Director General of the pageant, Railroads on Parade, which was given daily in the railroad building. The *Bowker,* resplendent in crimson paint and burnished brass, appeared daily in the pageant.

From the collection of Mr. Hungerford there is a model of the *Antwerp,* an American type locomotive, and two passenger cars and a baggage car used in 1860 on the Rome, Watertown & Ogdenburg Railroad. The cars, named the *Ontario* and *St. Lawrence,* respectively, were used as sleeping cars in the '70s. L. S. Hungerford, a namesake of Mr. Hungerford, served as conductor on these cars before he became Vice President and General Manager of the Pullman Company. H. J. Coventry, of Baltimore, made these models.

Also from the Hungerford collection is a model of the *Croton,* wood-burning locomotive of the Hudson River Railroad, which is fifty or sixty years old; a model of the Pullman parlor car *Flying Dutchman,* made in the '70s and completé with seats, kerosene lamps, spittoons and other conveniences and a model of a modern mountain type locomotive of the Baltimore & Ohio Railroad, the *Philip E. Thomas.*

The New York Central Railroad exhibited a three-quarter inch scale model of its Hudson type engine, made by Charles Lamar, and the Pennsylvania a model of an old type 2-8-0 engine.

Mr. Howard Dayton, former treasurer of the New York Chapter, exhibited an engine bell presented to him by Mr. Edward W. Scheer, President of the Reading Company and the Central Railroad of New Jersey.

An example of international amity was provided by the donation of an old signal for exhibit at the fair by Mr. C. L. Terroux, Vice President of the Canadian Railway Historical Association. This signal is of the Piper hollow box type and was made about 1881. It formerly was used on the line of the Delaware & Hudson Company near Montreal, which track eventually became the property of the Canadian National Railways. Mr. Terroux saved this signal and another like it from destruction. The mast of this signal is hollow so that the lantern may

be inserted in a door in the base and hauled by a chain to the operating position.

Another obsolete signal on display is a ball type, from the Phillips & Rangely Railroad, later the Sandy River & Rangely Lakes, a two-foot gauge line. It was used at Phillips, Me., and is the property of James Warnock, of Swampscott, Mass., our of our members.

Over the entrance to the society's booth is a brass likeness of the *Alvah Crocker,* a locomotive that ran on the Fitchburg Railroad, Hinkley & Drury, of Boston, having built it in 1845. This plaque stood for years outside the Fitchburg Station in Boston in a niche designed for the purpose. When that station was demolished, it was affixed to the Lechmere Square Building. Ultimately the Boston & Maine Railroad placed it in the custody of the society.

Some of the currency issued in 1837 by the Champlain & St. Lawrence Railroad and described in BULLETIN No. 39 of the society is exhibited by Mr. L. B. N. Gnaedinger, former chairman of the New York Chapter. This currency was issued because of a banking crisis in the United States and Canada.

"The notes of the Champlain & St. Lawrence Railroad," reads the description in the bulletin, "were issued on August 1, 1837, and were for 12½, 25 and 50 cents; the values being shown in Canadian, American and French terms; for example, the 50-cent note was marked two shillings six pence Halifax currency, half dollar American and ecu in French."

There also was on display a model of the old Jimmy four-wheel coal car from the society's exhibit in the Baker Library in Harvard University. These cars were familiar in the coal district for many years, but heavier equipment and the air brake drove them from the rails. Any attempt to have equipped them with air brakes would have had interesting consequences. As it was, they frequently played leap frog and "follow the leader" into the ditch.

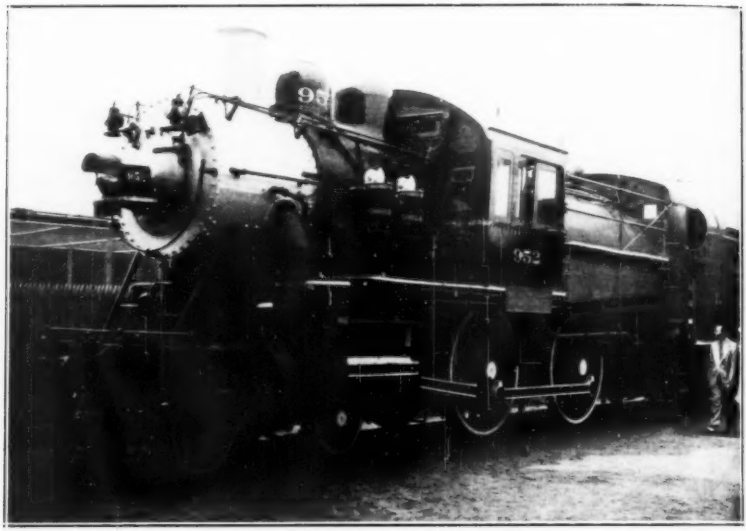
The American Car and Foundry Company contributed some photographs of old passenger car interiors. Some of these photographs were used to illustrate the article by V. R. Willoughby, vice president of the company, which appeared in our BULLETIN No. 46.

Numerous photographs of engines and stations, old posters and time tables were provided by the New York Central, Pennsylvania, Baltimore & Ohio, Boston & Maine, Reading Company and others.

Mr. Robert C. Schmid, treasurer of the New York Chapter, contributed a number of photographs of old locomotives. Of interest to New Yorkers were photographs of the steam equipment that formerly carried passengers from New York to Coney Island and Manhattan Beach. Mr. W. J. Rugen, a director of the New York chapter, contributed more photographs.

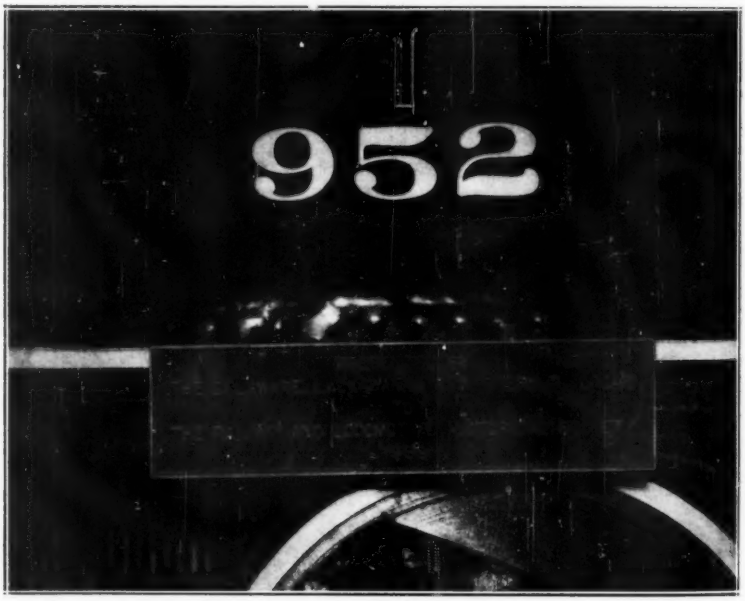
The photographs provided by the American Locomotive Company included one of the famous *C. P. Huntington.*

From the society's collection at Harvard University were train lanterns—Concord Railroad, 1855; New Haven & Northampton Railroad, 1859; Boston & Albany Railroad, 1855 and Fitchburg Railroad of 1854.



Courtesy of Railroads, N. Y. World's Fair.

D. L. & W. #952 presented by the road to this Society.



Courtesy of Railroads, N. Y. World's Fair.

Presentation Plaque beneath cab of D. L. & W. #952.

A link and pin coupling exhibited by the Baltimore & Ohio Railroad, an old Mohawk & Hudson strap rail and an old gouge hand drill were other items in the collection.

Quite a story was attached to the appearance of the *Bowker* at the fair. Gilbert H. Kneiss who was associated with Mr. Hungerford in the direction of Railroads on Parade, "escorted" this locomotive East. He travelled across the continent in an old Central Pacific passenger car mounted on a flat car next the *Bowker*. Comforts were few but he brought along his electric razor with a special battery to operate it, electricity not having been introduced into the type of car he used for this pilgrimage.

The locomotive donated by the Lackawanna to the society is of the 4-4-0 type and was built in Schenectady in 1905. Once it pulled the fastest Lackawanna trains but in recent years it has been relegated to commuter traffic. Its road number is 952. Other details of its construction follow:

Working boiler pressure 185 pounds; Stephenson valve motion; tractive power 23,701 pounds; weight of engine and tender. 159,200 pounds; length of engine and tender 59 feet.

With this as a beginning, it is the hope of members in the New York region that a permanent railroad exhibit may be sponsored by the society after the close of the fair. It is planned to continue the society's exhibit when the fair reopens next year.

Worth Reading

(Compiled by Elizabeth O. Cullen, Reference Librarian, Bureau of Railway Economics, Association of American Railroads, Washington, D. C.)

BOOKS AND PAMPHLETS

The Association of American Railroads—Its Organization and Activities. 24 pp. Washington, D. C., Association of American Railroads "The Association of American Railroads is the organization of the principal railroads of the United States, Canada and Mexico, for dealing with matters of common concern in the whole field of railroading . . . Numerous other railroads in North America and all over the world are associate members, receiving the benefit of the reports of the Asscciation's technical and research committees . . ." pp. 1, 3. Organization outline with locations of offices and summary of principal activities of divisions and sections, pp. 4-20. List of members, pp. 21-24.

Canada's Railway Problem, by C. D. Howe. 8 pp. Washington, D. C., Railway Accounting Officers. Address of Canadian Minister of Transport at Toronto meeting, June 27, 1939. Will be printed also in 1939 Report of Railway Accounting Officers.

The Chinese Railways, Past and Present, by Cheng Lin. 332 pp. Folding map. Shanghai, China United Press. The note in Railway Age, August 26, 1939, p. 314, on the 530-mile railway to be built from Kunming to Burma "to be completed as soon as possible to facilitate the shipment of munitions and supplies to the war zones" is an interesting supplement to this book.

The Development of Railroad Regulation in the United States and Its Application to Present Transportation Conditions, by E. H. Bunnell. 21 pp. Washington, D. C., Railway Accounting Officers. Address at Toronto meeting, Railway Accounting Officers, June 29, 1939, which will be printed also in their 1939 Report.

La Locomotive à Vapeur, by André Chapelon. 914 pp. Plates, Illustrations, Diagrame. "Evolution des Types en Europe et en Amérique de 1907 à 1937" pp. 11-117, and "Examen des Principaux Types" pp. 118-284, profusely illustrated, are of interest to model locomotive builders. "Evolution" of steam locomotives since 1937 discussed by Mr. Chapelon in his *Derniers Progres de la Traction Americaine à Vapeur* in Traction Nouvelle, Paris, France, May-June 1939, pp. 96-107, and by J. Lange in his *La Locomotive à Vapeur,* in Traction Nouvelle, July-August 1939, pp. 132-133.

The Modern Railway, by Julius H. Parmelee. pp. New York City, Longmans-Green & Co. The book presenting railways in the United States as they function today in our transportation network, with brief history of each form of transportation.

Pooling in the United States 1920-1939—*A List of References with Notes.* 81 mimeo. pp. Washington, D. C., Bureau of Railway Economics Library, Association of American Railroads. Chronologically arranged, with notes and quotations indicating points of view on pooling of all sorts.

Romance of Railroad Finance, by John W. Barriger, III. 24 pp. Princeton, N. J., Princeton University Press, for The Necomen Society, American Branch. Address at 1939 Transportation Symposium, February 7, 1939, at The Franklin Institute, Philadelphia, Penna. ". . . It, therefore, seems that the railroad problem today results from failure to have permitted Hill and Harriman, Cassatt and Vanderbilt to be utilized continuously *for the public welfare*, and that the way out . . . may be to recognize that error and re-establish the principles on which they started towards greatness the systems with which their names will forever be associated . . ." p. 20.

The Story of the West River Railroad, by Victor L. Morse. 32 pp. Illus. Brattleboro, Vermont, Mr. Morse. "A complete account of the life of the 36-mile railroad from Brattleboro to South Londonderry, Vermont, reprinted from a series of articles published in The Brattleboro Reformer and The Vermont Phoenix, 1939."

Trains, Tracks and Travel, 5th Edition, by T. W. Van Metre. 341 pp. Illustrated, partly in color. New York City, Simmons-Boardman Publishing Co. How fast tomorrow becomes today in railroading is evident throughout the book, particularly in Chapter VIII—Streamlined from Coast to Coast, pp. 221-237.

Transport Conditions in Great Britain and the Railways' Campaign for a "Square Deal", by C. E. R. Sherrington. Washington, D. C., Railway Accounting Officers. Address at Toronto meeting, June 28, 1939. Will be printed also in Railway Acounting Officers 1939 Report.

Universal Directory of Railway Officials and Railway Year Book 1939-1940, compiled from official sources under the direction of The Editor of The Railway Gazette, London, England. 608, 119 pp. London, England, The Directory Publishing Co., Ltd. ". . . The lists of railway officials have been carefully revised, and brief descriptions of the chief railway systems of the world, with the latest available financial results, have been added . . . Recent political changes in Central Europe have had corresponding influence on the extents and organizations of certain railways . . ." Preface, pp. 2-3.

ARTICLES IN PERIODICALS

Differential Rail Rates A Result of Economic Laws, by S. R. Truesdell. Traffic World, March 25, 1939, pp. 669-671. Comment ". . . certain data which Mr. Truesdell has included. . . are of great interest to all railways, because he brings out in a very lucid manner the relationship between cost of operation and density of Traffic. . ." with abstracts

in Railway Research Service Bulletin, London, England, July 1939, pp. 92-93.

The First Passenger Train, by Charles E. Lee. Notes from Minute Book, Oystermouth Railway. "This was March 25, 1807; the earliest known date of the regular conveyance of passengers by rail. . ."

How Congress Left Transport Bills S. 2009 *Advanced to Conference Stage As Session Ends with Chandler and Bridge Measures Enacted.* Curious explorers of the Congressional Record will discover that 475 bills relating to railroads were introduced. What happened to the bills that were considered is summarized in this article. Railway Age, August 12, 1939, pp. 255-257.

Indian Railways—An Outline of Their History and Development, by L. H. Kirkness. Diagrams. Journal of the Institute of Transport, London, England, July 1939, pp. 368-378.

Meeting the Challenge of Floods in Southern California. How the Southern Pacific Has strengthened Many Miles of Lines and Rebuilt Many Structures in This Territory to Prevent the Recurrence of the Disaster of March, 1938. Sketch plan of Soledad Canyon, Santa Clara River, showing track relocation and channel changes made, and illustrations. Railway Age, August 19, 1939, pp. 280-286.

Modern Diesel Locomotives, by L. E. Caldwell. Southern & Southwestern Railway Club Proceedings, Atlanta, Ga., May 1939, pp. 11-23, with discussion pp. 23-35.

Rocky Mountain News, Denver, Colorado. 80th Anniversary Progress Edition, 1859-1939, *April* 23, 1939. Includes illustrated articles on pony express, railroad extension to Denver, and stagecoach operations.

Sacramento, California, Bee—Sacramento-Golden Empire Centennial 1839-1939 [*Number*], *May* 5, 1939. Much California transportation history outlined, with illustrations.

Steam-Electric Locomotive, by H. L. Andrews. ". . . With the completion and operation of the two units for the Union Pacific Railroad, the situation today in motive power is not unlike that existing more than 100 years ago! At that time an important question in motive power selection had to be decided. Horatio Allen in 1829 attempted to calculate the relative economics of steam locomotives and horses for draft purposes on railroads. . . Allen chose to champion the steam locomotive . . . Now, as then, there are more than one type of motive power which may be used on American railroads. . . The steam-electric locomotive constructed for the Union Pacific Railroad is to operate between Chicago and Pacific Coast points. . . and consists of two identical units, each rating 2500 h.p. . . *This, incidentally, is the first time in the world that two steam-powered locomotives have been operated in multiple-*

unit, or as a 'double-header', under the control of one engineman. . ." pp. 152-153. New York Railroad Club Official Proceedings—"General Electric Night", March 1939, pp. 149-163, with discussion pp. 164-167. Illustrations and diagrams.

Transportation Policy and the Railroads—3rd Fortune Roundtable. Members, p. 50. "The Area of Agreement" and ". . . the main area of disagreement" p. 51. Fortune, August 1939, pp. 50-51, 80, 82-84, 86-88, 90.

Transportation Viewpoints, by Balthasar H. Meyer. ". . . The 'railroad problem' has always been a bundle of problems. That bundle has increased steadily in size for a century. . . Today it is pre-eminently a transportation problem because the basic railroad problem. . . has been created by other agencies of transportation than the railroads. . ." p. 23. "United States transportation problem No. 1," p. 24. "United States transportation problem No. 2", pp. 24-26. ". . . As a layman I can not see why as a matter of physical performance the railroads should not be able to hold their own and regain some lost ground if they are permitted to operate on a basis of equality with their competitors. . ." p. 35. Western Railway Club, Chicago, Illinois, Official Proceedings, May 1939, pp. 22-35.

A Trip Through Russia on the Trans-Siberian Railroad, by Gail Cleland. The pastor of the First Congregational Church of Alameda, California, describes the line and the country through which he passed on a recent trip. Pacific Railway Club, San Francisco, California, Proceedings, April 1939, pp. 4-14, with answers to questions from audience, pp. 14-16.

New Books

RAILROADS AND RIVERS, by William H. Clark, 334 pages, 8½x5¾, illustrated. Bound in cloth. Published by L. C. Page & Co., Boston, Massachusetts. Price $3.50.

This book is the second in the American Cavalcade Series and is a story of Inland Transportation. This book, despite its title, deals chiefly with the history and development of the American railroads. Mr. Clark has rendered a real service in describing the building of the network of toll-roads by private companies along the Atlantic seaboard and he gives rather a keen appraisal of the birth of governmental liberality for the improvement of harbors and rivers of which—"there will never be an end as long as tax money can be appropriated by legislative bodies." His chapter on regulation is recommended to all who need to catch up in their reading and his discussion on present-day railroad competitors informs without offending anyone that is fair-minded.

With careful research with a clear arrangement of material, the author has given a straightforward account of the railroad during the boom period without sacrificing important details. He speaks clearly in the matter of highway and water-way costs and the justification of air transport subsidies. The book is well illustrated, indexed, carefully bound and is pleasant reading. If widely circulated it will fill a much needed want in furnishing a basic education in the truths of transportation.

A HISTORY OF TRANSPORTATION IN CANADA, by Prof. G. P. DeT. Glazebrook, 475 pages, 9½x6½. Bound in cloth. Published by Yale University Press, New Haven, Connecticut. Price $4.00.

This volume, prepared under the direction of the Carnegie endowment for international peace and following closely on the publication of "The Railway Interrelations of the United States and Canada", prepared under the same endowment, will fill a much needed want in the library of one who is interested in the history of Canadian transportation.

The foreword by Mr. Innis prepares the setting as the work is not intended to serve as an interpretation of Canadian history. The development of Canada is bound with its transportation enterprises and the factors that shaped Canadian history affected the development of its transportation. Furthermore, changing modes of transportation have influenced the development of Canada.

The book covers a range commencing with water transportation in the days of the French regime to the present time. The chapter on the First Railway Era and those that follow on rail transportation are of especial interest, clearly and simply told. The discussion of the public owned Canadian National and the need of its removal from politics, in a country that has always favored private enterprise, is convincing testimony against the pitfalls of governmental control. "If, after the necessary years of experiment, Canadian democracy cannot trust its

representatives either to direct, or to appoint those who should direct, a public enterprise, the future of public ownership is doubtful indeed." We of this country might ponder well this simple statement.

Prof. Glazebrook has made a valuable contribution in the historical field of research. A well arranged index, the maps, make it of value to the student of history and the book contains a vast storehouse of information that is of immense value.

A SHORT HISTORY OF THE STEAM ENGINE, by H. W. Dickinson, 255 pages, 9½x6. Bound in cloth. Illustrated. Published by The University Press at Cambridge, England and the Macmillan Co., New York, N. Y. Price $3.50.

The author, already the biographer of Watt, Boulton and Trevithick and for more than thirty years at the Science Museum, South Kensington has been collecting material on this subject. The reader must bear in mind that the heat engine had some rather curious beginnings but that it was not until the increased demand for power, which water could never supply, did the heat engine fill any useful purpose and develop. The author first treats of the men who conceived the essential principles, then of the earliest reciprocating steam pumps and from these two the rotary motion of the piston. Each is carefully treated in turn, together with the ingenious methods used to master their difficulties. Lastly, he treats of the kinetic energy of steam, concluding with the modern turbine.

The book is technical but it is far from dry. The reader will learn how and why the machines work and he has succeeded in making the inventors live their place in the development of the steam engine. One of the most interesting charts is the one found at the end of the volume—Synopsis of events in the history of the steam engine. This covers a period from 1600 to the present time and one at a glance can trace the development of the steam engine as it fitted in with the economic condition at that time. Furthermore, our members must remember that our locomotives basically are a product of the heat engine.

THE STORY OF THE WEST RIVER RAILROAD, By Victor L. Morse, 32 pages, 9¼x6. Bound in paper. Illustrated. Published by Victor L. Morse, Brattleboro, Vermont. Price 35c.

A few years ago there appeared in the "Brattleboro Reformer" and the "Vermont Phoenix" a series of articles covering an account and history of this little 36 mile line from Brattleboro to South Londonderry, Vermont. Commencing operations in 1880 as a narrow gauge road, this little line served the communities until 1936. It started under the name of Brattleboro & Whitehall R. R., in 1878 but the promoters, unable to complete the road, took the easiest way out and leased it to the Central Vermont in 1879. In 1905 the road was changed to standard gauge and the 1927 flood all but destroyed the little road. The Central Vermont decided it was not worth repairing and in 1929 turned it back to local management. As a resident of Brattleboro, Mr. Morse has viewed the career

of the little road through its many vicissitudes and added to the history many of its tribulations. Perhaps the situation can best be summed up by a statement made in "The Reformer" in 1903—"Today it (the railroad) is the most uncertain, the flimsiest, the most dangerous piece of public conveyance imaginable . . . Nobody has ever been accused of failing to catch a train on this road. The meanest thing a passenger could do was drag his feet, for that brought it to a halt and stops were avoided if possible because of the uncertainty of the start. The time table reads like a cookbook."

In Memory Of

LEWIS H. BENTON

395 Weir Street

Taunton, Massachusetts

Who Died on May 5th, 1939

and

COL. LAURENCE A. CURTIS

3290 Sixth Avenue

San Diego, California

Who Died on May 15th, 1939